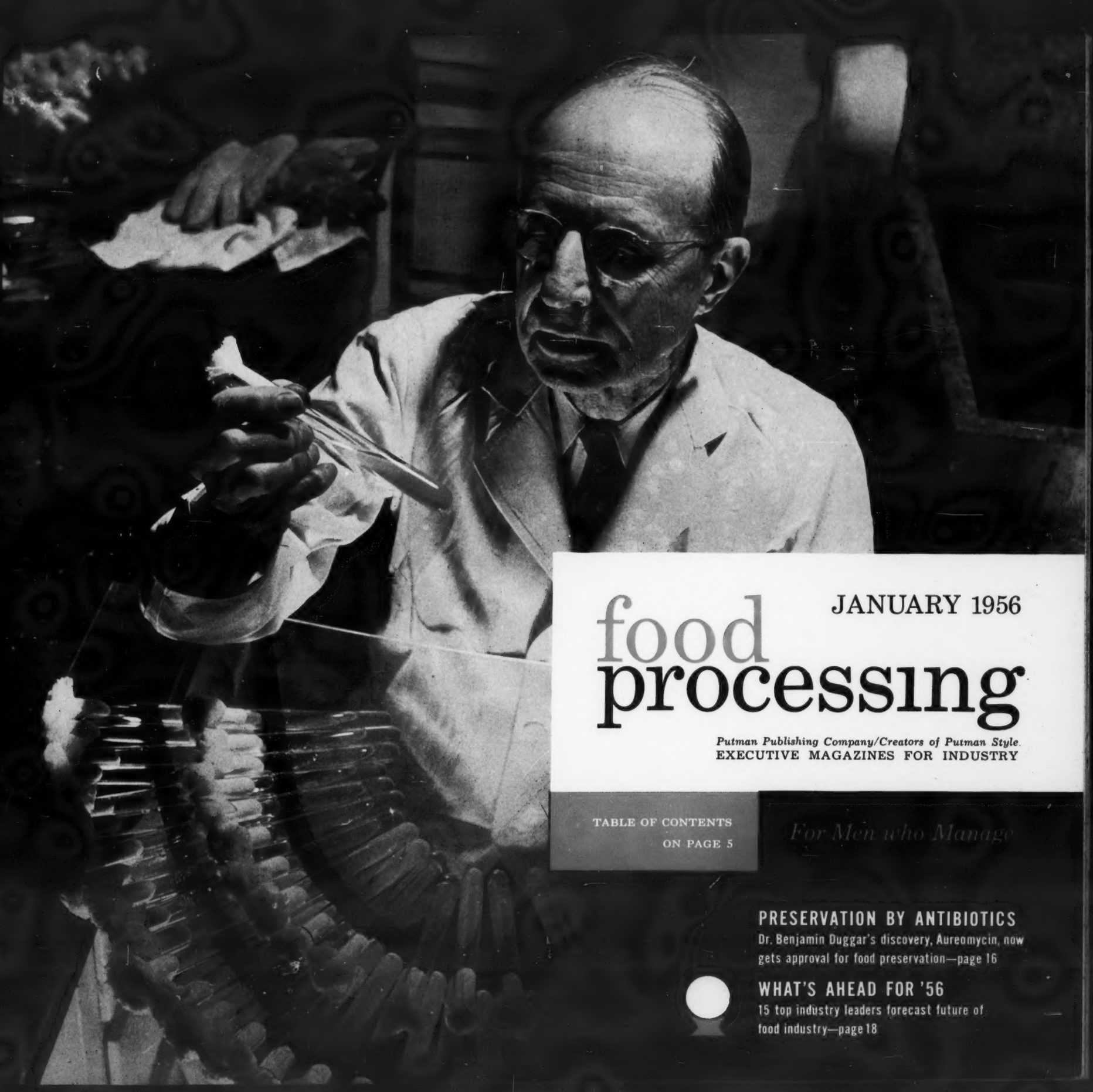

JANUARY 1956

food processing

Putman Publishing Company/Creators of Putman Style
EXECUTIVE MAGAZINES FOR INDUSTRY

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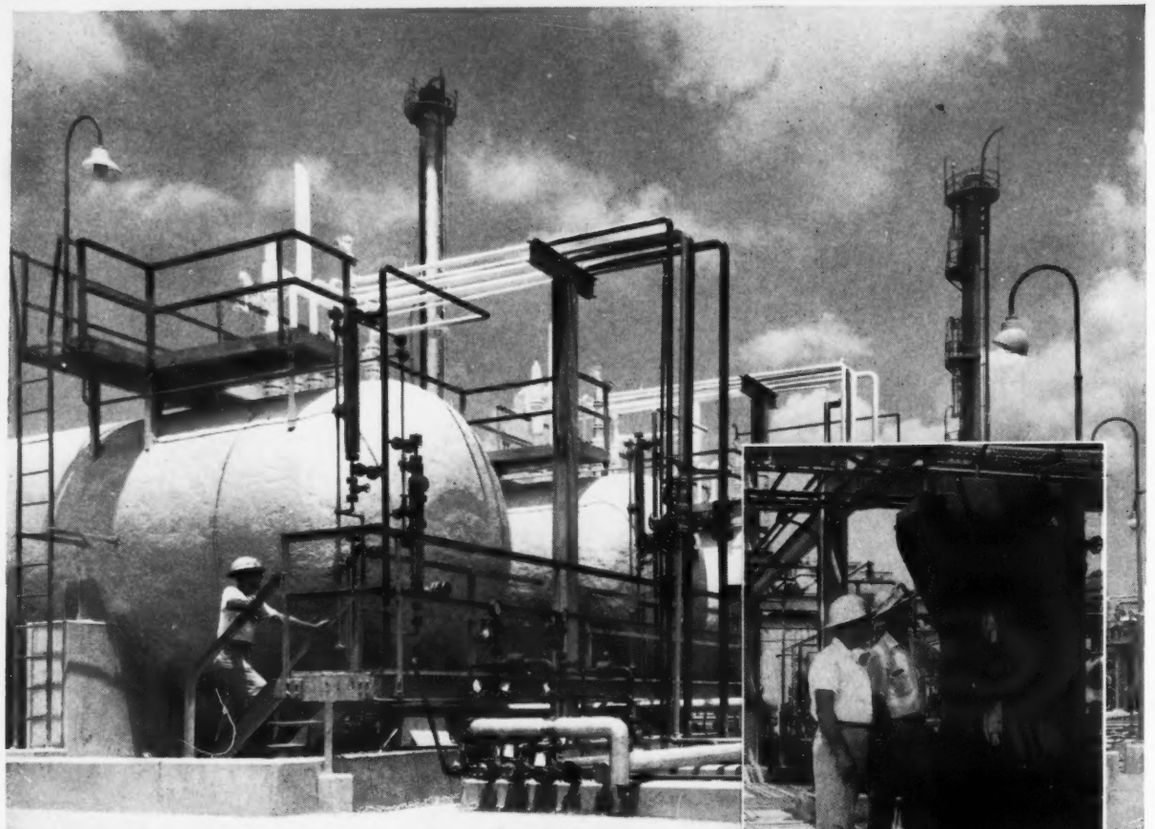

New Norco plant makes Shell Chemical the nation's largest single supplier of glycerine.

More

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Seven years ago, Shell Chemical startled industry with this news . . . high-purity *synthetic* glycerine, produced from petroleum, in commercial quantities!

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When inquiring check FP 4244 opposite last page

that's

"Smoked" Chicken

Researchers in Scotland are teaching chickens to smoke in an effort to find out if there is any connection between smoking and lung cancer. After experimenting with other laboratory animals, hens were found to be most satisfactory for such tests. Some chickens did not seem to notice smoke puffed into their lungs through tiny holes in their throats. Others seemed to enjoy their smoke of about half a cigarette a day.

No need to stand and stir

Patent has been granted for a device that stirs food while it is cooking. It is in the form of a pot lid that houses a spring-wound motor such as is used for toys. Lid also holds spoons on underside. As motor spring unwinds, pot top turns, causing spoons to stir food (Pat. No. 2,719,703).

"Cash a check for you —? Sure, just watch the birdie!"

The Security Check Register is an electronic multi-lens camera which takes a simultaneous picture of a check and the person cashing it on a single-frame 35 mm film. It mounts vertically on the counter. Using natural lighting, it operates with a flick of the finger and requires no photographic skill on the part of the user. When a check is presented for cashing, clerk merely places it on counter under camera and snaps the shutter. A sign informs the customer that a picture is being taken for identification purposes. It is not necessary to make prints unless a bad check shows up (Security Electronics Corp., Dept. FP, 589 Fifth Ave., New York, N. Y.).

interesting

One-third goes for food

Almost one-third of the American consumer's dollar goes for food and tobacco — a grand total of $78.6 billion, with the largest part, $55 billion, going for food bought for home, picnic, and lunchbox consumption. About $14 billion is spent for meals and beverages at eateries. Tobacco accounts for $5.2 billion.

Cones filled automatically

Ice cream cones can be filled automatically by means of machine for which Patent No. 2,719,494 has been granted. An ice cream dispenser holds a supply of the confection. To fill a single-dip cone, a scoop is attached. When a handle is pulled, scoop dips out cream for the cone. If a carton is to be filled, a trap door is opened above the ice cream. After carton is inserted, ice cream is pushed into it until filled (*D&O News,* Dodge & Olcott, Inc. New York).

Green steak, purple potatoes

Just how important is the color of foods in making them appetizing? Well, just ask yourself how you would like a green-colored steak for dinner? And, to go with it, red peas, mashed potatoes of a deep purple hue, and pink bread. Such a rainbow meal was contrived as part of a research project on relationship between color and taste. Foods were colored with edible dyes furnished by Dodge & Olcott.

These tests, which confirmed a presumed negative reaction to such unfamiliar colorings, were the subject of an article in *Parade* magazine some weeks ago. Project was connected with experiments by Dr. Joseph L. Kanig of Columbia University College of Pharmacy.

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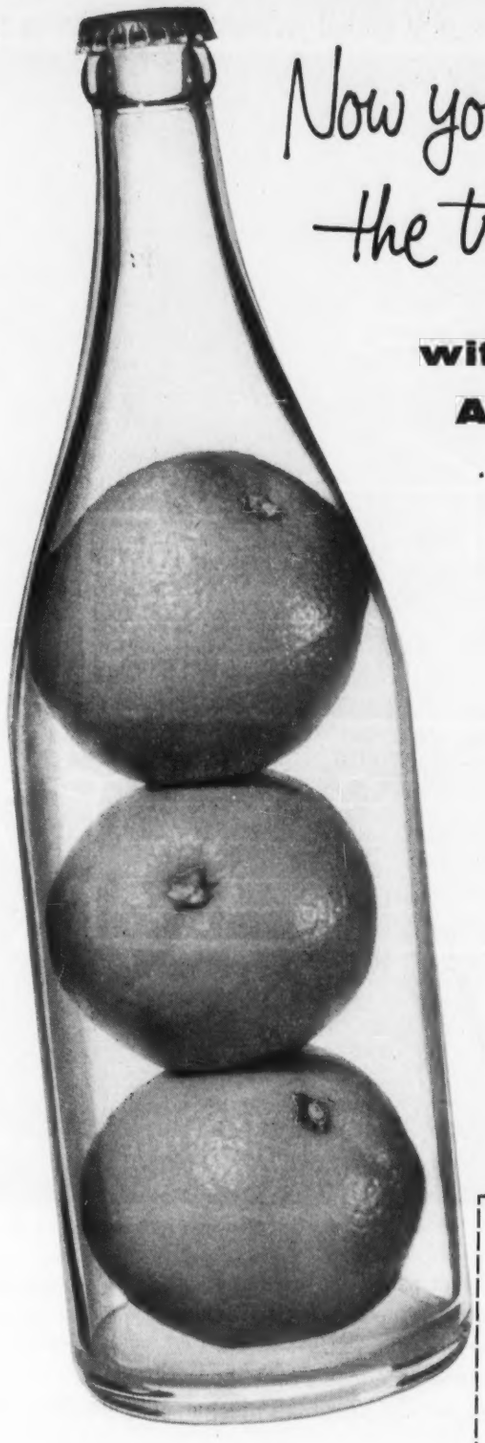

Now you can **seal in** the true fruit flavor!

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. . . protects soft drinks against flavor-fading (and color-fading, too)

● Bottlers who are now adding Pfizer Ascorbic Acid to soft drinks report a significant increase in shelf life. In some tests shelf life has even been *doubled.*

That's because Pfizer Ascorbic Acid successfully counteracts the effects of oxidation—the fading of flavor and color. It does this equally well for either bottled or canned beverages. Does it *safely* and *economically.* And you'll find it's a cinch to add Pfizer Ascorbic Acid when you prepare your syrups.

In citrus drinks where the oxidation problem can be severe, color-fading and flavor-fading are easily detected. *For less than a cent a case* Pfizer Ascorbic Acid will keep the flavor of these and other drinks fresher far longer. (In fact, it often actually *enhances* the natural flavor!) And it cuts down the color-fading caused by sunlight storage, too.

Why not protect the sales of your products this simple way? Test the effectiveness of Pfizer Ascorbic Acid in your own flavors and formulas. Pfizer Technical Service men will be glad to help you. Write for our *Technical Bulletin 86.*

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Please send me ☐ *Technical Bulletin 86*
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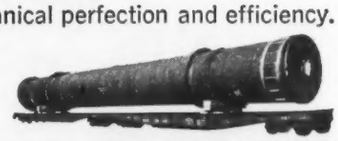

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Over the editor's shoulder

In 1956 . . .

Top brass of 15 of our largest food companies are well aware that even they cannot predict with assurance what will happen next year. However, they certainly are in a preferred position to point out important trends and the direction the food industry is moving. And this is what they have done beginning on page 18.

Their predictions in somewhat lengthier form were first published in the December issue of FOOD BUSINESS — the only magazine devoted exclusively to the highly specialized group of top executives responsible for the sales side of our gigantic food industry.

FOOD BUSINESS came into being in 1953 to cover problems of selling and distribution which have assumed new importance in recent years with the ascendency of self-service stores. Food manufacturers now find that they must somehow or other create a demand for their products through the consumer to assure getting space on the shelves of the self-service stores. Their problem becomes especially important when their products compete with the house brands of the big supermarket chains.

In this extremely competitive merchandising of foods, ideas are vital to survival. "Things that are developing"—the ideas of top sales management in the food industry—are reported on each month in FOOD BUSINESS.

Both FOOD BUSINESS and FOOD PROCESSING are magazines of Putman Publishing Co., which also publishes CHEMICAL PROCESSING. Thus, Putman Publishing Co. gives specialized editorial service to two sides of our gigantic food industry.

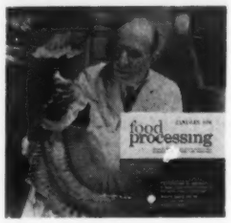
Howard P. McCarthy

EDITOR

VOL. 17, NO. 1 / JANUARY 1956

food processing

For Men Who Manage / Published in Chicago, Food Capital of the World



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HOW'S YOUR CANNING I.Q.?

Do you know that...

Peas

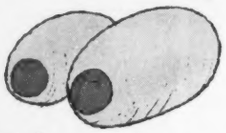
have tender skins, and contain pectins? When a salt having more than 150 parts of calcium and magnesium per million parts of salt is added to peas, it toughens their tender skins, and down-grades their quality.

Beets

contain oxalate? When calcium and magnesium impurities exist in a salt, they react with the oxalate to form calcium and magnesium oxalate. This is left as an unattractive, white deposit on the beets.

Corn

is high in sulphur? Copper and iron impurities in a salt react to give corn an unsightly dark brown or black color. These impurities also react with vegetable fats to cause rancidity and off-flavor.



Olives

contain olive oil and tannins? When excessive calcium is present in a salt, calcium oleate, a soapy, white deposit is formed. The tannins combine with the calcium to create a dark-colored brine.

Beans

like peas, contain pectins? They taste best when tender. But when calcium and magnesium impurities exist in a salt, the bean skins harden. Result? Choice-quality beans are down-graded one or more grades.

Spinach

contains oxalate? When calcium and magnesium impurities are present in a salt, an unappetizing white substance forms on the spinach. The result is decreased customer satisfaction, and down-grading.

So why let impure salt down-grade the legumes you pack?

Use Diamond Crystal Flake Salt...it will help you get highest quality and profits from your product!

- **Diamond Crystal Flake Salt is low in calcium and magnesium impurities**—its higher uniform purity produces a true salt flavor that enhances the natural flavor of raw vegetables!
- **Diamond Crystal Flake Salt is low in heavy metal contamination**—has less than 1.5 parts per million of pro-oxidants copper and iron!
- **Diamond Crystal Flake Salt is highest in cleanliness**—has the lowest insoluble content of any canning salt. It's the cleanest ingredient you can buy!

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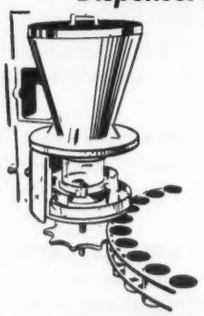

This accurate, new automatic salt dispenser is an engineering triumph. It deposits just the right amount of salt in each can *every time*. Never misses! Eliminates tablet burns, too! Send for full information today!

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Food Regulations

News and Interpretations
FDA • Congress • Identity Standards
Meat Inspection • Court Decisions
USDA Grade Standards • State Legislatures

Chemical, food processors meet overtime to prepare suitable additive legislation

Processing executives and other food leaders are involved in a legislative year on Capitol Hill that can have great significance to the industry for years to come. A leading case in point is chemical additive legislation on which there have been important recent developments.

It has not been advertised, but chemical and food industries have been burning the midnight oil for some weeks in an effort to reach agreement on the complex question of use of additives in foods. Industry unity, it is felt, will bring results that otherwise would be impossible.

Fundamental difference between additive bills supported last year by food and chemical groups concerned judicial procedure. Legislation backed by the Manufacturing Chemists Association in the last session of Congress provided that an additive could be used in the face of an adverse decision simply on 30-day notice to the government.

The food industry supported legislation that would prohibit use of an additive unless first approved by FDA, along with provision for industry appeal to circuit courts. This procedure, most processing leaders believe, would insure against use and promotion of an additive only to run up against subsequent government objections.

Declaratory judgments

It is no secret that since the last session of Congress, and until recently, there had been a tug-of-war going on between the chemical and food people. Then top executives of both industries called a halt and began to seek out common ground. What they had come up with at press time was a possible compromise based on declaratory judgments by the courts in disputes of use of additives in foods. While not lawsuits, decisions in such cases may be equally final.

There is still some difference of opinion on this point. Some believe that the courts, asked to evaluate technical findings, would seldom if ever disagree with expert government witnesses of Food & Drug Administration. Others say the procedure would be helpful.

"To employ declaratory judgments", as one industry

representative put it, "would have a salutary effect simply because the courts would be there looking over the FDA's shoulder".

FDA officials themselves are chary about comment, but it is quite clear they would prefer the declaratory judgment procedure to the legislation supported last year by the chemical industry. It would mean, in effect, "trying a case without evidence", according to some insiders, but the process would protect the consumer.

FDA amends ban; poultry first commercial pack processed with antibiotics

Food & Drug Administration has opened the door for the use of antibiotic drugs on food. Acting on a specific application for the use of Aureomycin to keep dressed poultry fresh longer, the FDA amended a 1953 policy declaration which banned the "presence of any amount of antibiotics" on foods.

While the amendment leaves the over-all principle unchanged, it implies for the first time that antibiotics may be acceptable if proved useful and the residues safe.

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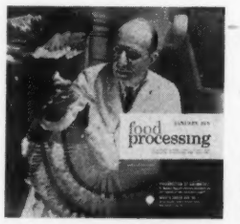

THIS MONTH'S COVER

In 1943, Dr. Benjamin M. Duggar, the discoverer of Aureomycin chlortetracycline, was "too old" under state law to continue teaching botany at the University of Wisconsin. A year later, at the age of 72, he "got a new job" at American Cyanamid, and in the next couple of years recorded the greatest scientific achievement of his already extended lifetime. His work with the golden-colored mold yielded one of the most useful of the "wonder" antibiotics. At 83, he is still active in research work.

Now, after literally billions of Aureomycin doses have been used to fight disease, and to "build" meat on hogs and chickens faster and cheaper, another new and exciting chapter in its usefulness has opened with its acceptance in food preservation by the FDA. The first chapter of this new era in food technology begins on page 16 of this issue.

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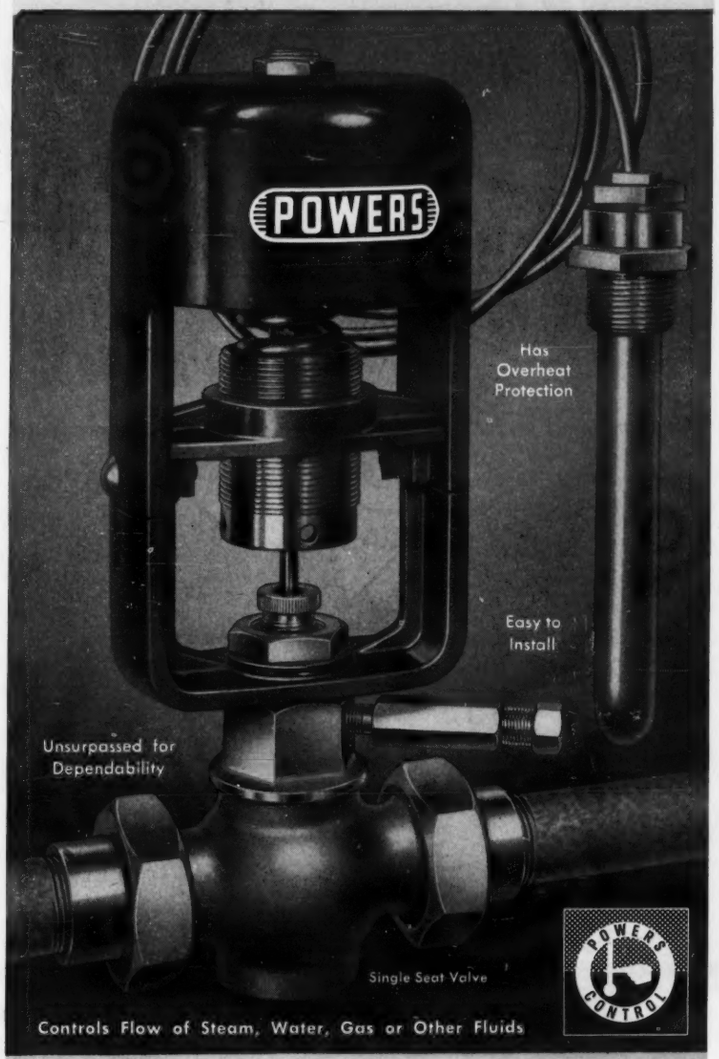

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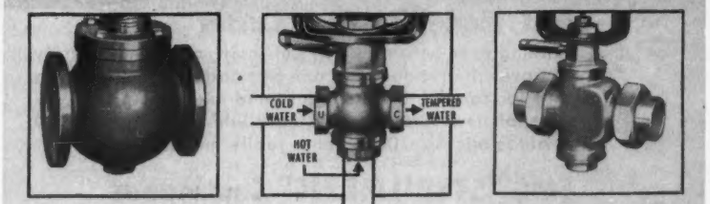

Various Valve Bodies and Inner Valves are available. Single and Double Seat Valves thru 2" have rugged bronze bodies with bronze union connections for quick, easy installation. Bulletin 329 gives information about all types.

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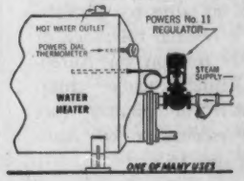

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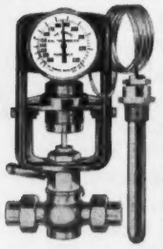
- **Powers Nationwide Service and 24 Hour Delivery** in the U.S.A. are important time and money saving advantages.



- **Indicating Regulator** with easy to read 4" dial thermometer helps adjust the regulator and check temperature at the bulb. Various dials and ranges are available.

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(*Continued from preceding page*)

Unless serious protests come from consumers or industry, use of Aureomycin (in a trade product called "Acronize") will be permitted on dressed poultry. FDA set a residue tolerance of 7 parts per million on Aureomycin (technical name, chlortetracycline) for poultry (see article "Preservation by Antibiotics", page 16).

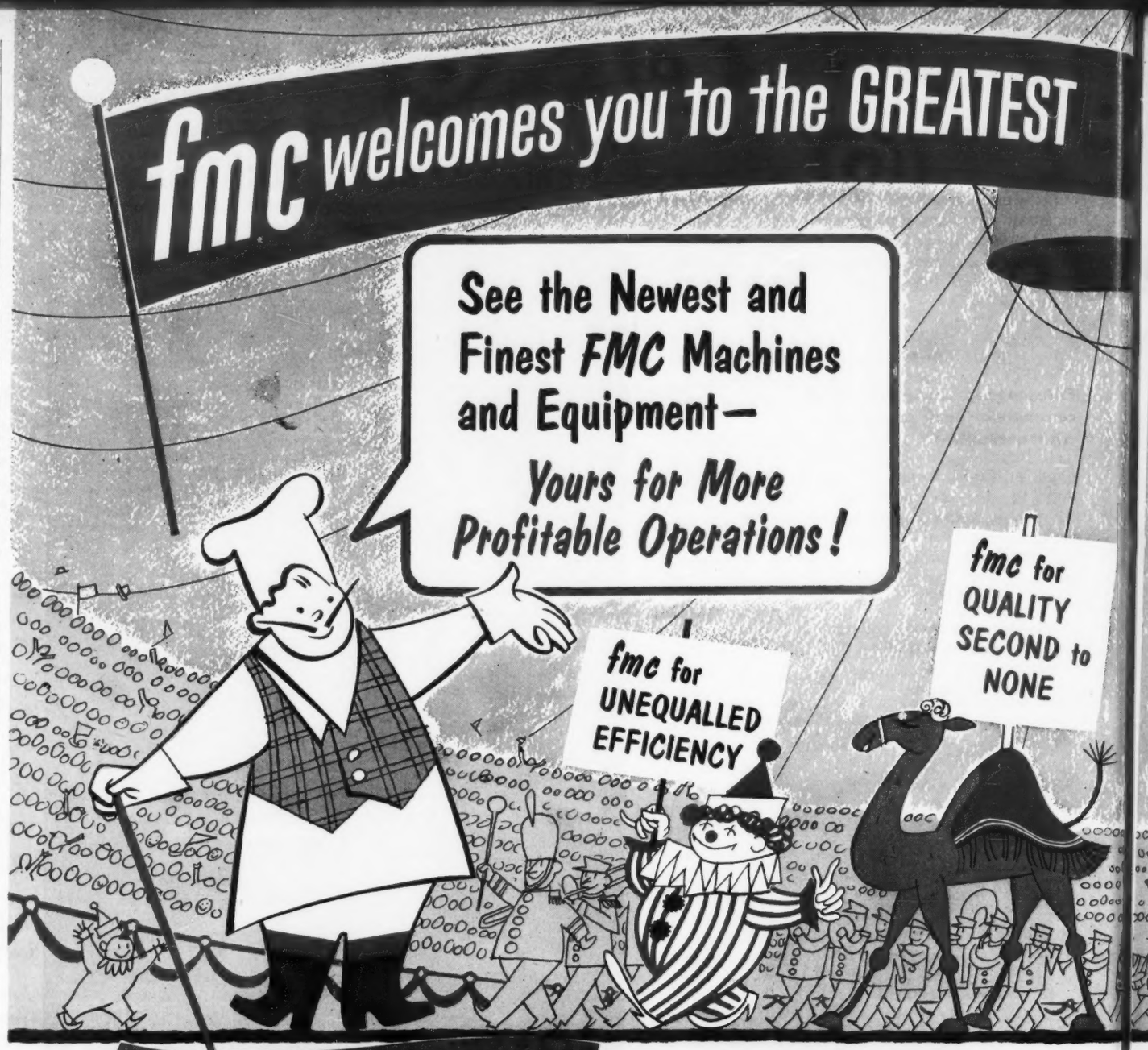
Various firms are also experimenting with antibiotics to maintain freshness of fish, seafood, and red meats. A certificate of usefulness must be obtained from the Agriculture Department, and safety proved to FDA before commercial use. M. F. Markel, Washington lawyer, representing American Cyanamid Co. in the case of Aureomycin's use in the poultry dip, tells FOOD PROCESSING that seafood (probably shrimp) may be next on the product list for antibiotic treatment. Red meats, he believes, will follow, although "there is a lot more work to do in the case of both seafoods and meats".

Citrus groups contest ban on coal tar dyes in court

FDA's ban on coal tar dyes will be contested by Florida citrus groups. A test case is headed for court, probably the Second Circuit in New York.

A stay will be asked of the government order which otherwise would take effect in mid-February: As reported a month ago in FOOD PROCESSING, the FDA ban involves FD&C Orange No. 1, FD&C Orange No. 2, and FD&C Red No. 32. The latter two are dyes used in coloring the outer skin of oranges.

The law requires coal tar food colors to be "harmless and suitable for use in food". Lawyers for the citrus people will seek court interpretation of what constitutes a "harmless" dye. Their contention is that the two dyes used on oranges are incapable of harm as used . . . that under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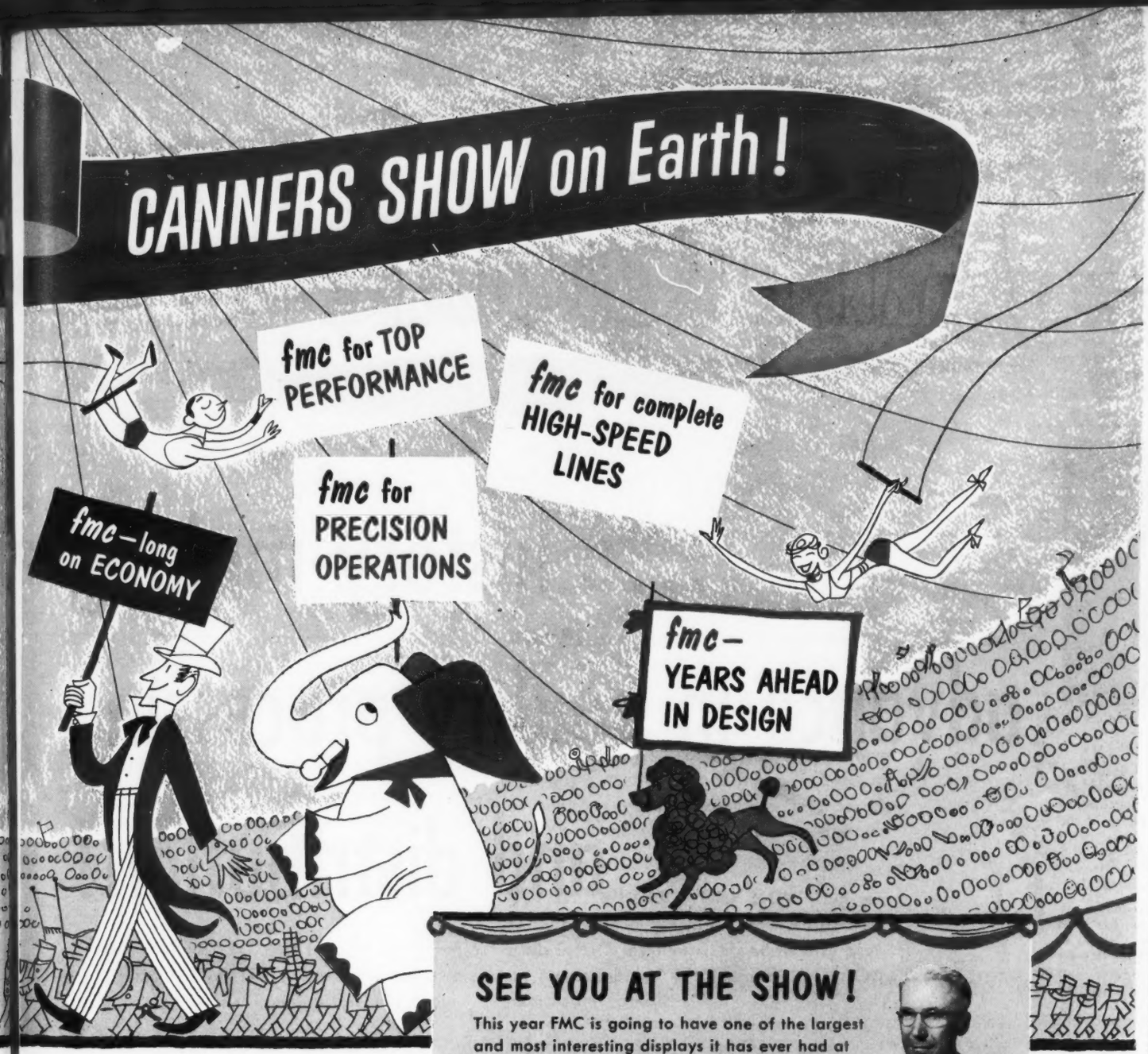
15-Station Pea & Bean Filler
"Jet" Disposer


CANNERS SHOW on Earth!
fmc for TOP PERFORMANCE
fmc for complete HIGH-SPEED LINES
fmc for PRECISION OPERATIONS
fmc—long on ECONOMY
fmc— YEARS AHEAD IN DESIGN

SEE YOU AT THE SHOW!

This year FMC is going to have one of the largest and most interesting displays it has ever had at a Canners Show. Of the more than 20 units to be shown, many will be shown for the first time. All of them are either new items for FMC, or incorporate new features that are sure to capture your attention. We hope you will be there to share in the activity and meet with us at our FMC booth. Welcome to FMC... and the Greatest Canners Show of them all!

C. W. Wilson

THE PLACE
Atlantic City, New Jersey

THE DATES
January 18 to 21, 1956

BOOTH ADDRESS
#1 Soup Avenue
Headquarters for the Canning Machinery Division of FMC

FOOD MACHINERY AND CHEMICAL CORPORATION
Canning Machinery Division
General Sales Offices:
WESTERN: SAN JOSE 6, CALIFORNIA **EASTERN:** HOOPESTON, ILLINOIS

the FDA interpretation water and salt could be declared harmful on grounds both are poison when taken in large enough quantities.

Citrus groups also will promote legislation in the current Congress to separate the two dyes used on oranges from Orange No. 1 which is used in such foods as confections, beverages, and in some meat products (especially hot dogs). The idea is to get a law that allows use of FD&C Orange No. 2 and Red No. 32 on oranges with Orange No. 1 treated as a special problem. It is Orange No. 1 that has given trouble, most recently in Boston where several children were hospitalized with intestinal disturbances after eating popcorn containing the coal tar color.

Can crop quality be realistically tied into price supports?

Processors have been especially sought out by congressional leaders for help in working up new legislation effecting production of their raw products. In a letter requesting leaders of farm organizations to "get their heads together" and come up with new agricultural programs, Chairman Allen Ellender (D., Miss.) of the Senate Agriculture committee called for "a plan to encourage the development of quality and readily merchantable" commodities.

Basic question being considered by the nation's farm leaders is whether price supports for farmers should be graduated — with higher price props for "quality stuff" and lower support for less desirable quality.

(*Continued on page* 57)

For more information on product at left, specify FP 4249 . . . see information request blank opposite last page.

FOOD INDUSTRY NEWS

New Plants
Companies
Personalities

Shirriff-Horsey Corp., Ltd., a new international food organization, will result from a merger of Shirriff's Ltd., Toronto, and the J. William Horsey Corp. and its subsidiaries. The Horsey Corp., with headquarters at Plant City, Florida, is a leading producer of canned citrus products. Shirriff's Ltd. was founded in 1883. It produces marmalades and flavoring essences. W. Grant Horsey, who has headed the Horsey company since 1950, is president of the new company.

W. GRANT HORSEY

THOMAS G. FOGARTY

Thomas G. Fogarty became president of the Continental Can Co. January 1, succeeding Hans A. Eggerss, retired. Reuben L. Perin, vice president of the Eastern division, has been elected executive vice president of the Metal division, the post held by Fogarty since 1950.

Roy D. Wooster, vice president of the Borden Co. in charge of fluid milk and ice cream operations, has been elected a director of the company. He replaces Charles F. Kieser, who has been a director since 1947. Mr. Kieser is vice president in charge of the special products division. He will continue in this capacity until his scheduled retirement April 1, 1956.

Omaha Cold Storage Co., Omaha, has been acquired, through exchange of stock, by Consolidated Foods Corp. The Omaha organization is also known as Ocoma Foods Co. and was incorporated in 1899. President S. M. Kennedy of Consolidated and H. C. Sheridan, chairman of Omaha Cold Storage, said the transaction will not affect operating policies of either company. Omaha will be a wholly owned subsidiary.

"Gaylord Container Corp." is the name of a new subsidiary of Crown Zellerbach Corp., formed coincident with the merger of Gaylord Container Corp. of St. Louis and Crown Zellerbach Corp. of San Francisco. The new company is a wholly owned subsidiary of Crown Zellerbach. Its directors and officers have been selected from the active management of the Gaylord Container Corp. which existed before the merger.

Announcing

...a history-making advance in poultry processing and distribution!

ACRONIZE prolongs poultry freshness from your plant... to the retailer... to the consumer!

ACRONIZE does not change processing routine!

ACRONIZE expands your market, brings profitable new business to you!

ACRONIZE*

Chlortetracycline

The big news in poultry is ACRONIZE! This amazing new product retards the growth of bacteria that cause poultry to lose freshness. It was developed after long testing by American Cyanamid Company, one of the world's major chemical and pharmaceutical firms.

THINK WHAT THIS MEANS! Now you can ship farther, and retailers can order *more* of your poultry for weekends and holidays with confidence that it will remain fresh much longer. ACRONIZE is just what your customers have been waiting for!

NO "EXTRAS" TO BUY! You'll be amazed at the simplicity of the ACRONIZE Process. You follow your *regular* routine; just add a pre-measured packet of powdered ACRONIZE to the water in the chill tank. *That's all!* After chilling, birds are completely processed, and bacterial growth is retarded!

NATIONAL ADVERTISING & PUBLICITY! ACRONIZE will be featured in newspapers and magazines, on TV and radio — to inform America's shoppers about this new standard of poultry freshness. Women will be asking retailers about it; retailers will be asking *you* about it.

GET THE WHOLE STORY NOW! Let one of our representatives show you why ACRONIZE really is "... a history-making advance in poultry processing and distribution!" For further information contact:

AMERICAN Cyanamid COMPANY Fine Chemicals Division • 30 Rockefeller Plaza, New York 20, N. Y.

the freshest poultry is ACRONIZED*!

*ACRONIZE and ACRONIZED are trade-marks of American Cyanamid Company

When inquiring check FP 4250 opposite last page

Karl Klomparens has been appointed Technical Director of Diamond Crystal Salt Co., St. Clair, Mich. For the past three years he has been assistant editor of FOOD PROCESSING and previously was an instructor in food technology at New York State University.

American Can Company's supplemental unemployment benefit is not a "guaranteed annual wage" or a plan which "will encourage people to become bums". This was emphasized by R. W. Eidson, Canco labor relations expert in speaking before the National Industrial Conference Board meeting in Philadelphia. He pointed out that Canco's sub plan was not more inconsistent with state statutes than private pension plans are incompatible with Federal Social Security.

Morton Packing Co., Louisville, has been acquired by Continental Baking Co., New York. George E. Egger, president of Morton Packing, will serve as president and chief executive of the new subsidiary, which will operate under the name of Morton Frozen Foods, Inc.

Donald W. Hill, vice president of Crown Cork & Seal Co. and general manager of the specialty division at St. Louis has been promoted to vice president and general manager of the crown and closure division, Baltimore.

W. Carter Betsch has been put in charge of the new frozen foods division of the John G. Paton Co., New York. He has been vice president since 1954, shortly after W. C. Betsch Associates, Inc., merged with the Paton organization.

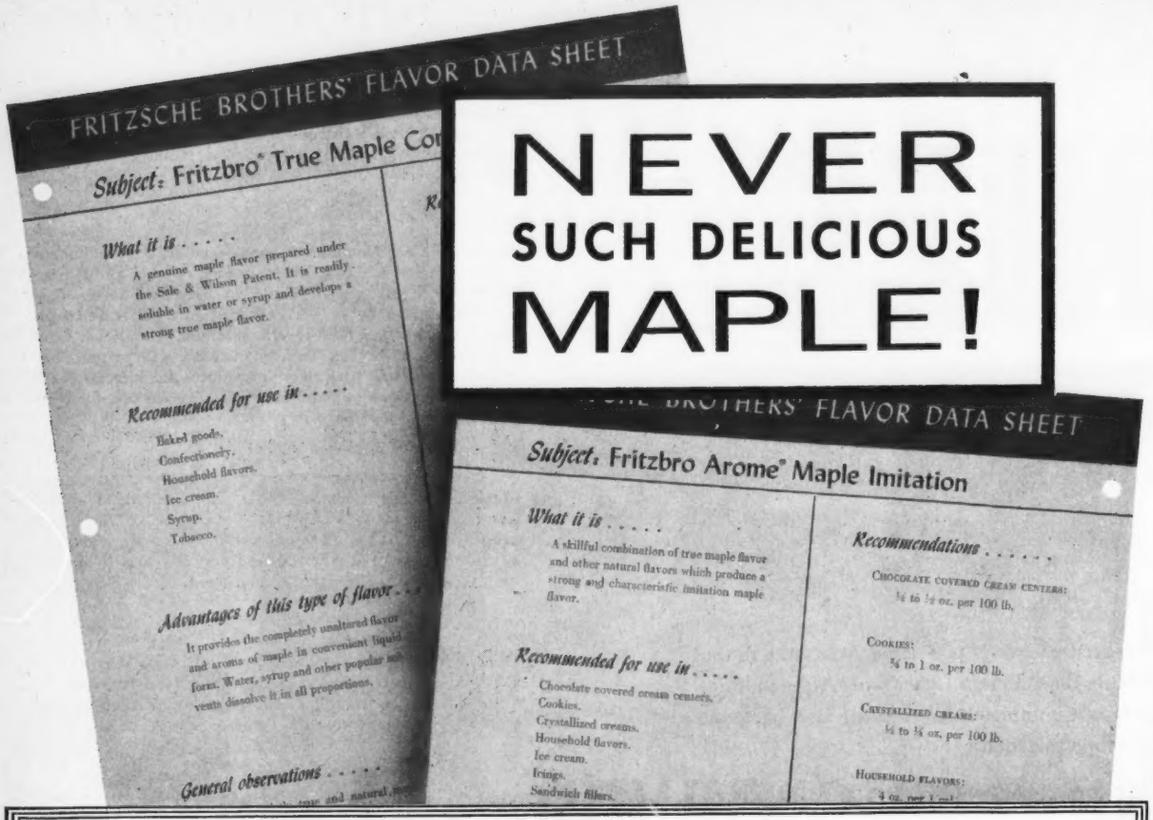
Fred M. Linder, president of the Jacob Ruppert Brewery, was elected president of the Brewers Board of Trade at the 75th annual meeting.

Thomas B. Humphrey has been appointed a vice president of General Mills (Canada) Ltd. with headquarters in Toronto. He joined General Mills in 1941. After service in World War II he returned to General Mills and became supervisor of mixes in 1952.

George H. Watson has been named general manager of General Foods' Atlantic gelatin division at Woburn, Mass. He succeeds Joseph H. Cohen, retiring vice president and general manager.

Dr. D. M. Doty, chemist and assistant director of research and education of the American Meat Institute Foundation, Chicago, has been elected chairman-elect, and Professor F. M. Strong of the University of Wisconsin re-elected secretary-treasurer.

True fruit flavor extracts are being produced by Felton Chemical Co., Inc. of Brooklyn, N. Y., in a new three-story building adjacent to the main Felton plant.


FRITZSCHE BROTHERS' FLAVOR DATA SHEET
Subject: Fritzbro® True Maple Co
What it is . . . . .
A genuine maple flavor prepared under the Sale & Wilson Patent. It is readily soluble in water or syrup and develops a strong true maple flavor.
Recommended for use in . . . . .
Baked goods.
Confectionery.
Household flavors.
Ice cream.
Syrup.
Tobacco.
Advantages of this type of flavor . . .
It provides the completely unaltered flavor and aroma of maple in convenient liquid form. Water, syrup and other popular solvents dissolve it in all proportions.
General observations . . . . .
NEVER
SUCH DELICIOUS
MAPLE!
FLAVOR DATA SHEET
Subject: Fritzbro Arome® Maple Imitation
What it is . . . . .
A skillful combination of true maple flavor and other natural flavors which produce a strong and characteristic imitation maple flavor.
Recommended for use in . . . . .
Chocolate covered cream centers.
Cookies.
Crystallized creams.
Household flavors.
Ice cream.
Icings.
Sandwich fillers.
Recommendations . . . . .
CHOCOLATE COVERED CREAM CENTERS:
¼ to ½ oz. per 100 lb.
COOKIES:
¾ to 1 oz. per 100 lb.
CRYSTALLIZED CREAMS:
½ to ¾ oz. per 100 lb.
HOUSEHOLD FLAVORS:

WHETHER GENUINE OR IMITATION, you have your choice of two of the finest maple flavors ever offered, in

FRITZBRO® TRUE MAPLE CONCENTRATE

a genuine maple flavor prepared under the Sale & Wilson Patent which provides the natural, unaltered flavor and aroma of maple in convenient liquid form; and:

FRITZBRO AROME® MAPLE IMITATION

a skillful combination of true maple flavor and other natural flavors to produce a strong characteristic imitation maple effect. These specialties may be used wherever the need is for fine, smooth maple effects and where solubility, convenience, economy and ease of handling are matters of important consideration. These flavors are recommended for use in confectionery manufacture, baked goods, household flavors, ice creams, syrups and tobaccos. For free Flavor Data Sheets describing these materials and/or working samples, write us on your letterhead indicating the use to which requested sample will be put.

FRITZSCHE *Established* 1871
Brothers, Inc.

PORT AUTHORITY BUILDING, 76 NINTH AVENUE, NEW YORK 11, N. Y.

BRANCH OFFICES *and* *STOCKS: *Atlanta, Georgia, Boston, Massachusetts, *Chicago, Illinois, Cincinnati, Ohio, *Los Angeles, California, Philadelphia, Pennsylvania, San Francisco, California, St. Louis, Missouri, Montreal and *Toronto, Canada and *Mexico, D. F. FACTORY: Clifton, N. J.

When inquiring check FP 4251 opposite last page

ASSOCIATION NEWS

Trade Associations
Technical Societies

Annual Instrument Short Course to be held at Los Angeles Harbor Junior College this month serves as a refresher course for engineers. Along with technical papers section, there is a practical methods section, which is designed to train technicians in maintenance, calibration, and application of control devices.

D&O Achievement Award for outstanding contribution to meat packing was awarded to Virgil R. Rupp, quality control manager of Kingan, Inc. Presentation was made by H. H. Corey, president of George A. Hormel & Co. and chairman of the American Meat Institute award committee. Rupp was honored for his development of a commercially practicable method of curing bellies by multiple-needle pickle injection, called Injecto-Cure.

RUPP (rt.) and COREY

H. T. HOLBROOK

H. T. Holbrook, corporate vice-president, Standard Packing Corp., was elected president of Packaging Institute during its 17th annual forum. Food executives who serve on the Institute's Board of Directors include: E. F. Dival, Corn Products Refining Co.; D. R. Grant, Beech-Nut Packing Co.; C. W. Kaufman, Kraft Foods Co.; R. M. Shultz, National Biscuit Co.; and Frank Greenwall, National Starch Products, Inc.

Perishable foods handling and storage will be featured at the "Advanced Seminar Training Conference" to be held this month at Purdue University. Program and reservations are available from National Association of Refrigerated Warehouses, Dept. FP, 1210 Tower Bldg., Washington 5, D.C.

Grover Steffen of the M. Steffen Co., Chicago, was elected president of the recently organized Vinegar Institute. J. B. Olwin, Central City Pickle Co., Bailey, Mich., is vice president.

Institute of American Poultry Industries' Fact Finding Conference opens Feb. 10 in Kansas City. There will be five program workshops, and more than 100 companies have reserved booth space in the Exhibition Hall.

Tea Assn. of the USA elected J. N. Frank of Wm. Scull Co., packers of Boscul tea and coffee, as chairman of its Junior Board of Directors. Succeeding Frank as secretary-treasurer is Ernest Engel of Thomas J. Lipton, Inc., Hoboken, N.J.

Glass container shipments during 1955 should reach an all-time high, C. C. Merrifield of The Econometric Institute, Inc., predicted at the recent meeting of the Glass Container Manufacturers Institute. The food industry will have an estimated 7% gain in shipments.

Doughnut Corp. of America has given funds for a scholarship for each of two annual general baking courses at the American Institute of Baking, Chicago.

Dr. W. R. Fetzer, chief chemist of Clinton Foods, Inc., received the 1955 Iowa medal of the American Chemical Society's Iowa Section. The engraved gold medal is presented to an Iowa chemist for meritorious achievement in teaching, research, or industry. Awardee's achievements are in chemistry of cereals, corn, and sugars.

Raymond T. Bohn, president of Bohn Food Research, Inc., has been reappointed consultant on sugar in baking to Sugar Information, Inc. He is author of numerous papers on baking, including the publication "Sugar in Bread Baking".

Association of Official Agricultural Chemists released the eighth edition of its publication "Official Methods of Analysis" at its recent annual meeting. This 1000-page volume is revised every five years and is used by law enforcement, industrial, and research scientists.

"Physics in the Food Industry" is the subject of an international symposium sponsored jointly by Southwest Research Institute and the Institute of Food Technologists. It will be held at the Plaza Hotel in San Antonio, Texas, March 15-16. The purpose is to explore with key technical people in the food industry the contributions physics can make in the way of preserving, packaging, and processing foods in the future. Subjects of technical papers to be presented will include ultrasonics, x-ray and gamma-ray inspection, electrostatics, dielectric heating, radiation sterilization, and radio frequency spectroscopy. All technical papers and discussions will be published for distribution.

The American Management Association opened offices at its new address, the Sheraton Astor Hotel, New York, Nov. 1. Official address is 1515 Broadway, Times Square, New York 36.

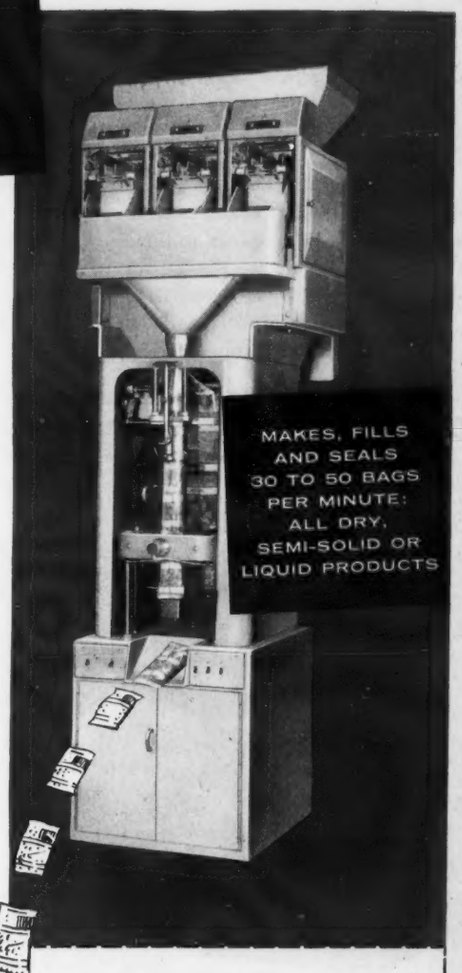
Third annual Forty-Niner service award will be made to L. G. MacDowell during the Atlantic City Canners Convention. The awardee is being honored for his work in developing the frozen orange juice concentrate process.

An Amazing New Money-Maker for Any Plant Packaging 3000 or More Bags Per Day!

THE TRIANGLE AUTOMATIC BAG MAKER and FILLER

First and only machine of its type practical and profitable for small plants as well as large ones

MAKES THE BAG! FILLS THE BAG! SEALS THE BAG!



Amazingly Low Priced!—Priced at about one-half that of any machine for the same purpose . . . an investment so attractive that if you are packaging *as few as 3000 bags per day,* it will pay for itself in *less than one year!*

Fast!—*output is determined by number and speed of the weighing scales — not by the number of bag making tubes* . . . fills and seals 30 to 50 perfect bags per minute—every minute.

Fantastically Simple!—Never before was there a bag making, filling and sealing machine so utterly simple . . . with so few parts . . . without difficult adjustments . . . without complicated mechanisms. Any of your operators can run it.

Flexible, Versatile! — Handles diverse range of products in all size bags up to 6″ face by 12″ long. Quick, easy changeover.

A Tremendous Money-Maker! — Get full facts and figures today. Return the coupon for new literature. There is no obligation.

TRIANGLE *Since 1923:* Weighers, Fillers, Powder Packers, Carton Sealers, Wrapping Machines, Bag Makers

TRIANGLE PACKAGE MACHINERY COMPANY
6638 West Diversey Avenue, Chicago 35, Illinois

Triangle Package Machinery Company
6638 W. Diversey Ave.
Chicago 38, Illinois

Please send bulletin on the new bag maker-filler:

Company_____

Street_____

City_____ Zone____ State____

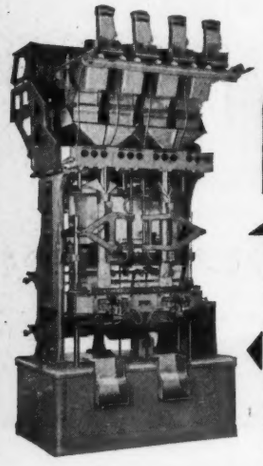
Your name and position_____

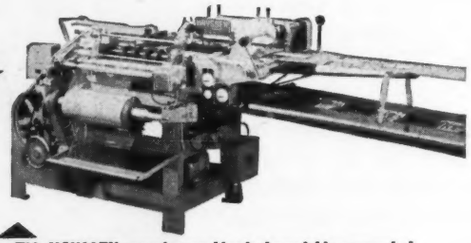
When inquiring check FP 4252 opposite last page

● Your Distributors, your Dealers, your Customers all prefer products that are better protected, more eye-appealing, easier to handle.

● Hayssen packaging gives you all this and more, at less cost . . . neater, tighter, securely sealed product protection everyone goes for.

● Hayssen uses more accurate Electronic control, completely automatic operation, fewer moving parts to wear out—get out of adjustment, heavy-duty construction for years of trouble-free packaging production.





This HAYSSEN wrapping machine is dependable, economical
Any shape, any size, neatly, tightly, easily wrapped. So simple to adjust, the operator does it—no expensive mechanics needed.

The New HAYSSEN "COMPAK" is Complete Packaging
One machine forms, fills and seals . . . any product: Solid, liquid, semi-liquid or powder. Heavy-duty Scale Feed, improved Volumetric, Auger or Pump Feeds.

Let our packaging engineers help you with your packaging problems . . . WRITE US TODAY for further information.

Hayssen MFG. COMPANY

Since 1910, Manufacturers exclusively of automatic wrapping and packaging machines.

Dept. FP-1, SHEBOYGAN, WISCONSIN

Atlanta • Boston • Chicago • Dallas • Denver • Detroit • Los Angeles • Minneapolis
New York • Philadelphia • St. Louis • San Francisco • Seattle • Montreal • Toronto

When inquiring check FP 4253 opposite last page

EXHIBITORS AT

CANNERS' SHOW

Convention Hall

Atlantic City, N. J. . . . Jan. 18-21, 1956

Booth†	Exhibitor	Product*
	A	
19F	A-B-C Packaging Mach. Corp.	B
27F	Acme Steel Co.	B
29F	Addressograph-Multigraph Corp.	B
4S	Algene Marking Equipment Co.	B
3F	Aluminum Co. of America	B
14V	Aluminum Cooking Utensil Co.	A, B
8R	American Can Co.	B
17S	Amerio Contact Plate Freezers, Inc.	A
11V	Max Ams Machine Co.	I
7J	Anchor Hocking Glass Corp.	B
12V	Angelus Sanitary Can Machine Co.	B
7V	Armstrong Cork Co.	B
6J	Associated Seed Growers, Inc.	C
4J	Ashworth Bros., Inc.	D
15J	Atlanta Paper Co.	B
17J	Audubon Wire Cloth Corp.	D
	B	
26J	Baldwin-Lima-Hamilton Corp.	I
22J	Ball Brothers Co.	B
10R	Barker Co.	D
8J	W. F. & John Barnes Co.	A, B, D
32F	Barry-Wehmiller Machinery Co.	A, B
15R	Berlin Chapman Co.	A, F
22S	E. W. Bliss Co.	B
19V	Brockway Glass Co., Inc.	B
24F	Brooks Chemicals, Inc.	E
7R		
12S	Burt Machine Co.	B
	C	
28F	Calif. Vegetable Concentrates, Inc.	G
1F	Canner Publishing Co.	I
12J	Canning Machinery Co.	A, B
2F	Canning Trade	I
18V	CESCO	D, E
13F	Chain Belt Co.	D, E, H
17R	Cherry-Burrell Corp.	A, B
3J	Chisholm-Ryder Co.	A, B, C, D
10V	C. I. T. Corp.	I
34F	Clark Equipment Co.	D
31V	Container Corp. of America	B
11J	Continental Can Co.	B
6V	Corn Products Sales Co.	G
9V	Corneli Seed Co.	C
7F	Crites Moscow Growers, Inc.	C
11R		
16S	Grown Cork & Seal Co.	B, D
	D	
23F	Darworth, Inc.	C, E
21V	Dewey & Almy Chemical Co.	B
33V	Diagraph-Bradley, Inc.	B
13V	Diamond Crystal Salt Co.	G, H
30V	Diversey Corp.	E
19R	Dixie-Way Machine Co.	B, D
18J	Dodge & Olcott, Inc.	G
34V	Douglas-Guardian Warehouse Corp.	I
12R	Dudley Corp.	A, D, F
18S	E. I. du Pont de Nemours, CEL-O-SEAL Section	I
	E	
29S	Economic Machinery Co., Div. Geo. J. Meyer Mfg. Co.	B
26F	Electric Sorting Machine Co.	A
26S	Elgin Mfg. Co.	B
	F	
28J	Fawick Airflex, Div. Federal Fawick Corp.	H
7S	J. L. Ferguson Co.	B
15V	Ferry-Morse Seed Co.	C
11S	Fiske Bros. Refining Co.	E
2S	W. J. Fitzpatrick Co.	A
1S	Food Machinery & Chemical Corp., Canning Machinery Div.	A, B, C, D, F
	G	
20F	Gallatin Valley Seed Co.	C
22F	General Electric Co., X-Ray Dept.	H
25S	Griffith Labs	G
	H	
4F	Frank Hamachek Machine Co.	C
26V	Hamilton Copper & Brass Works, Div. Brighton Copper Works, Inc.	A
3S	Hazel-Atlas Glass Co.	B
11F	Heekin Can Co.	B
5F	Horix Mfg. Co.	B, D
16V		
15F	Huntley Mfg. Co.	A, D
10S	Huron Milling Co.	G
	I	
35V	Int'l. Minerals & Chemicals Corp., Ac'cent Int'l.	G
24S	Int'l. Salt Co., Inc.	A, G

† Exhibitor Booths are designated by number and "address". To facilitate preparation of this Directory, the following abbreviations are used:

F—Fruit Avenue
J—Juice Avenue
S—Soup Avenue
R—Relish Avenue
V—Vegetable Avenue

* Equipment and supplies made by the exhibiting firms are designated by letters as follows:

A—Processing Equipment—kettles, homogenizers, evaporators, coolers, tanks, piping, fittings, screens, washers, graders, cutters, brine makers, bulk salters, sanitary pumps, blanchers, etc.

B—Packaging Machines & Supplies—fillers, cappers, containers, cartons, labels, labellers, closures, casers, marking and label imprinting equipment, can making machinery, etc.

C—Crop Production & Handling—seeds, planters, harvesters, viners, wood preservatives, etc.

D—Materials Handling—belting, conveyors, lift trucks, unscramblers, can handling systems, magnetic separators, can elevators, pumps, etc.

E—Sanitation & Maintenance—machinery, chemicals, lubricants, rust preventives, sweepers, water repellant coatings, etc.

F—Instruments — controllers, indicators, testers, lab equipment, etc.

G—Ingredients—spices, seasonings, antioxidants, colors, salt, syrups, etc.

H—Other Equipment—motors, steam boilers, refrigeration, drives, etc.

I—Other exhibitors and those not classified at press time.

Who may register: The exposition of canning and freezing machinery and supplies is open to representatives of the food processing industry and certain other government and educational representatives. Appropriate badges available at the Registration Desk are necessary for admission.

This list of exhibitors is as accurate as it is possible to prepare at press time. For last minute changes, the reader should contact the Canning Machinery and Supplies Association, Suite II, 4630 Montgomery Avenue, Washington 14, D. C.

Booth†	Exhibitor	Product*
	K	
13R	Kieckhefer Container Co.	B
	L	
24J	F. H. Langsenkamp Co.	A
1R	Lee Metal Products Co., Inc.	A
8F	Link-Belt Co.	A, D
	M	
5R	Magnuson Engineers	A, F
14R	Malayan Tin Bureau	I
25V	Manitowoc Engineering Corp.	B
8S	H. J. Mayer & Sons Co., Inc.	I
32V	Metal Glass Products Co.	I
30F	Metro Glass Co., Inc.	B
5V	Michael-Leonard Co.	C
37V	Mojonnier Bros. Co.	A
25F	Morrison Bros. Seed Co.	C
8V	Morton Salt Co.	A, G
	N	
9S	National Can Corp.	B
19S	National Container Corp.,	B
39V	National Starch Products Inc.	G
21S	N. J. Machine Corp.	B
12F	Northrup King & Co.	C
	O	
10F	Oakite Products, Inc.	E
2J	Old Dominion Box Co., Inc.	B
17F	Geo. J. Olney	A
4R	Owens-Illinois Glass Co.	I
	P	
15S		
16F	Pfaudler Co.	A, B
22V	Productive Equipment Corp.	A
29V	Pure Line Seeds, Inc.	C
	R	
10J	Rietz Mfg. Co.	A
27V	Robbins & Myers, Inc.	D
5J	A. K. Robins & Co., Inc.	A, B, D, F
28V	Rogers Bros. Seed Co.	C
24V	Rust-Oleum Corp.	E
	S	
9R		
14S	Scott Viner Co.	A, C, D, F
6S	Sellers Injector Corp.	E
3R	Shuttleworth Machinery Corp.	I
23V	Simplicity Engineering Co.	A, D
21F	Sinclair-Scott Co.	A
16J	Standard-Knapp, Div. Emhart Mfg. Co.	B, D
6F	Wm. J. Stange Co.	G
	T	
14F	Taylor Instrument Cos.	F
27S	Thatcher Glass Mfg. Co., Inc.	B
23S	Ladish Co., Tri-Clover Div.	A
13S	Tygart Valley Glass Co.	B
	U	
41V	Union Bag & Paper Corp.	B
1V	United Co.	A, D, E
1J	U.S. Bottlers Machinery Co.	B
6R	U.S. Steel Corp., Market Develop. Div.	A, D
	V	
20S	Vaughan's Seed Co.	C
	W	
14J	Walker-Wallace Div., A. P. V. Co., Inc.	A
5S	Wallace & Tiernan, Inc.	A, D, E, H
3V	Lansing B. Warner, Inc.	I
20V	Washburn-Wilson Seed Co.	I
20J	Waukesha Foundry Co.	A
18F	Weston Electrical Instrument Corp.	F
2R	White Cap Co.	B
2V	F. H. Woodruff & Sons, Inc.	I

Convention and Exhibit

Schedule 1956

Jan. 22-26. Seminar Training Conference on Handling Perishable Foods, National Association of Refrigerated Warehouses, Refrigeration Research Foundation, Purdue University, Lafayette, Ind.

Jan. 23-24. Symposium, Medicated Livestock Feeds, FDA Veterinary Medical Branch, Washington, D. C.

Jan. 23-26. Plant Maintenance & Engineering Show and Conference, Convention Hall, Philadelphia, Pa.

Jan. 26-27. Fifth Annual Instrument Short Course, Los Angeles Harbor Junior College, Wilmington, Calif.

Jan. 29-Feb. 2. National Frozen Food Convention and Exhibit, Waldorf-Astoria Hotel, New York, N. Y.

Jan. 31-Feb. 3. American Society of Sugar Beet Technologists, Ninth Biennial Conference, Mark Hopkins Hotel, San Francisco, Calif.

Feb. 10-12. Institute of American Poultry Industries, Fact Finding Conference & Exposition, Municipal Auditorium, Kansas City, Mo.

Feb. 16. Dairy Products Improvement Institute, Annual Meeting, Hotel Commodore, New York, N. Y.

Mar. 1-2. Dairy Industries Supply Association, Annual Meeting, Hotel Commodore, New York, N. Y.

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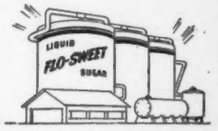

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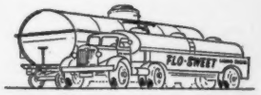

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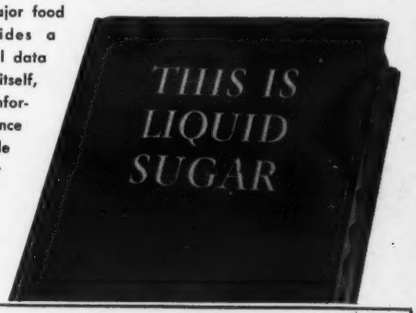

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FIRST IN LIQUID SUGAR

SERVING INDUSTRIAL SUGAR USERS EXCLUSIVELY
FROM YONKERS — PITTSBURGH — TOLEDO — DETROIT

When inquiring check FP 4254 opposite last page

to drying, freezing,

and heat processing... now add

preservation by antibiotics

FDA acceptance of Aureomycin compound for poultry icing immediately opens these new avenues for technology:

right now:

- *Poultry freshness maintained for three weeks*

future:

- *Improved tenderness and color for red meats*
- *Freshness of fish extended several days; boats can operate longer, go farther from port*

A new method of food preservation has been opened to food processors with the announcement Nov. 30 that the Food & Drug Administration has accepted an antibiotic for use in food preservation. The antibiotic is chlortetracycline (also marketed as Aureomycin). It is added to the water (at 10 ppm) in which poultry is chilled after dressing, to give an increase in refrigerated shelf life from the present few days to as long as three weeks. FDA has set a tolerance of 7 ppm of the antibiotic in the dressed bird. Evidence submitted to FDA by the manufacturer indicates no antibiotic remains in the meat after cooking — the compound is heat labile, and is completely destroyed during heating.

Opens New Research Vistas

Significance of this ruling goes far beyond the immediate advantages to poultry technology and marketing, however. Now, food processors can allocate funds to further research on antibiotics for food preservation with the assurance that if new economically useful results are obtained, and data prove harmlessness, reasonable assurance of acceptance by public agencies may be expected.

When used with poultry, the flesh will absorb sufficient antibiotic to maintain freshness from 14 to 21 days, as contrasted with from 2 to 7 days under ordinary icing. In controlled tests, 45 families have eaten 3-week-storage birds that were treated in the antibiotic cooling water, and did not differentiate them from birds killed 1 to 2 days previously, purchased in commercial channels.

The chlortetracycline product is marketed under the trade mark "Acronize", and is available under franchise from the manufacturer to any poultry processor who meets specified sanitary standards similar to those required of federally inspected plants.

Antibiotic treatment "maintains" quality, but does not increase it. Therefore, the birds must be handled according to best packaging, refrigerating, and sanitary practices. Initial bacterial load must be low, and the birds fresh-killed for the treatment to be effective.

Economic Advantages with Poultry

Advantages of using the antibiotic dip treatment for poultry are multiple. For one, it allows use of the more effective "sub-scald method" — wherein the fresh-killed bird is placed in higher than usual temperatures (138-140°F). Antibiotic treatment overcomes the big objection to use of this method: The elevated scald temperature tends to remove the outer skin layer, making the product more vulnerable to bacterial attack. The sub-scald results in less damage to the carcass from mechanical pickers, and requires less time for removal of pin feathers. Fewer bruised birds and less down-grading result.

Much of the present tray packaging and wrapping now done at the retail level can be brought back to the central processing plant, through the longer fresh-retention characteristics resulting from use of the antibiotic dip. A recent study at a supermarket in North Carolina showed a total cost of cutting and packaging to be 3½ cents per bird when done at the store level. The same cutting and packaging job was done in a Virginia processing plant at a labor cost of ½ cent per bird. Cost of using the antibiotic treatment is about 1/3 cent per lb, giving a saving of 2 cents per lb on a 3 lb bird.

Shipping costs are also reduced. A refrigerated truck that holds 19,000 lb of whole, unpackaged birds can carry 30,000 lb of the same poultry, cut-up and packaged. This amounts to about ½ cent per lb saving on long hauls, less on shorter hauls. Frequency of delivery can also be reduced for further savings, and inventory problems become less acute.

Facilitates Beef Tenderness

Investigation of antibiotics in foods started around 1944, when Canadian researchers reported on compounds related to penicillin for preserving flesh foods, particularly fish. By 1950, several broad spectrum antibiotics were available. The present application is the first practical result of such studies.

In 1953, tests were run at Ohio State with beef rounds and whole animals infused with a solution of Aureomycin. One side of such animals was refrigerated immediately, the other left at room temperature for 48 hours. The latter side showed more tenderness and improved in color over the non-refrigerated side. The infusion of Aureomycin is made in an isotonic salt solution. Injection prior to slaughter and spraying the surface of carcasses immediately after slaughter are other methods of application to beef which are still undergoing field trials.

This process should prove to be a boon to warm climate countries, where beef carcasses can be dressed near the producing areas and transported for periods up to two days before refrigerating. The South American country of Colombia has already approved use of Aureomycin for beef.

Adds Week to Fish Freshness

For fish, field trials indicate that shelf life — at top quality — can be extended by one week over similar fish stored by ordinary means. Species on which data have been collected include scrod haddock caught off Massachusetts; halibut and salmon from Washington; red snapper from the Gulf of Mexico; black bass and weak fish from the Jersey Coast; sardines from Maine; plus shucked oysters from Chesapeake Bay. Fishing boats can work farther from their home ports, or fish longer without adversely affecting quality, present data indicate.

The actual process of incorporating the antibiotic

(*Continued on page* 84)

Aureomycin chlortetracycline solution is added at rate of 10 ppm to icing tanks after evisceration at a processing plant in Pennsylvania

15 top food leaders view 1956

THE VIEW AHEAD

Each year at this time, our associate publication, FOOD BUSINESS, presents a survey of opinions of leading executives in the food field. This year, 15 outstanding leaders have written their comments on What's Ahead for Food Business. These views encompass both next years' problems and promises, and long-term views looking well into the future. The consensus of all of these individuals seems to be one of considered optimism—interspersed with realistic appraisals of problem spots which should demand attention. The editors of FOOD PROCESSING believe that the remarks of these industrial leaders may be helpful to all of us in the food field, and so we present here these condensed versions of the 15 articles from FOOD BUSINESS.

Research deemed key to smooth progress

By **O. E. JONES**
Executive Vice President
Swift & Co.

With ample supplies of raw materials available to all processors, and the continuance of keen competition characteristic to the food industry assured, it is difficult to judge which of the several key factors in the industry will have primary effect during 1956.

The factor of research, however, seems eminently qualified to take the starring role. Not so much from the point of what new discoveries might be uncovered, but in the variation and continued improvement of products already available.

Segments of the industry able to put the improvements into effect smoothly, and within the ability of available production and distribution facilities, should reap benefits.

At Swift, we are ending our first century in business, and we are hopeful and optimistic for the next. We see no reason why the almost fantastic improvements predicted for the future in other areas of business and everyday living should not apply to the production, processing, and distribution of foods as well. Certainly there is much to be done. Research will be our guidepost.

The question which Ed Walzer, Editor of FOOD BUSINESS, submitted to the unparalleled experience and judgment of these industry leaders was:

"What single factor, trend, or eventuality will have the greatest effect on the food industry in 1956?"

Full impact of food basket "revolution" to be felt in '56

By **JOHN M. FOX**
President
Minute Maid Corporation

The tremendous growth of convenience foods in recent years is producing a revolution in America's food basket. This rapidly growing line of easy-to-prepare foods — particularly the "heat-and-eat" items — will make the greatest single impact on the food industry in 1956.

Mrs. Homemaker has been shifting more and more to convenience foods as a matter of course. Today, more than 13,000,000 married women are employed in full-time jobs. Other millions are engaged in civic and social activities or in part-time work. In addition, the average American family is earning its highest income in history and these incomes are still rising on all levels, giving the homemaker the means to spend more for food, to buy more convenience items.

Already, the frozen food industry is a $2,000,000,000 annual business, accounting for about five per cent of food sales in chain stores and super markets, a percentage figure that is destined to climb steadily in the months ahead.

Many long-established leaders in the food processing industry are expanding their convenience food divisions through acquisition of smaller companies specializing in these foods and through development of their own lines. In other cases, makers of different brands and products in convenience foods are merging for more financial stability and strength to compete in a rapidly growing market.

As a result, the advertising, promotion, and merchandising of convenience foods will intensify during 1956, delivering a still greater impetus to the sale of these items.

Processing, marketing cost advances could burst "convenience" bubble

By **WILLIAM G. KARNES**
President
Beatrice Foods Co.

As she has always done in the past, Mrs. American Consumer will again determine the dominant trends in the food industry in 1956. Unless she has changed her mind considerably, she will favor a continued expansion of the so-called "convenience" foods which have been multiplying rapidly in recent years.

In this connection, however, a word of caution is necessary to all food processors and distributors. The cost of processing, packaging, and handling "convenience" foods can easily get out of hand and uncontrolled costs might well wreck this, the most promising development in the food industry in many decades.

Because the distribution of pre-cooked foods requires refrigeration right up to the time of consumption, it involves changes in traditional methods of storage and display, and higher costs.

The foregoing applies with equal force to the entire food industry. The cost of distributing all food has risen markedly in the past five years despite the fact that in the same period food prices at the farm level have declined. The government cost-of-living index of retail food prices for the month of August, 1955, was more than 10 percent above the index figure for June, 1950. Food prices at the farm level, on the other hand, were 6.8 below the index for that month.

There are many problems in this field for which there are as yet no completely satisfactory solutions. The food industry, however, can take great satisfaction in the fact that the trends in the cost of processing and distributing prepared and pre-cooked foods have been steadily downward. Nevertheless, realization should only stimulate the industry to greater cost-saving efforts.

Competition plus expansion requires products with more built-in excitement

By **PAUL S. GEROT**
President
Pillsbury Mills, Inc.

It is difficult to single out any one particular factor, trend, or eventuality which will have a marked effect on the food industry in 1956. Instead, it would be more correct to say that a number of natural forces will be brought to bear on the food industry — these are the forces of population growth; public demand for nutritious food; public demand for new, interesting, and convenient foods; and the application of research to food manufacturing, packaging, and distribution

The American housewife has developed an appetite for new things in her kitchen, not only new equipment but new kinds of foods. She wants the excitement of presenting interesting and different meals to her family. The food industry will continue in 1956 to step up the introduction of excitement in its new products. Logically, the convenience factor will be a large part of it, and the food industry will continue to make life easier for the American consumer.

The food industry will spend more money than ever before, I predict, on research, not only so far as building products is concerned, but for packaging and distribution, also. The food industry will not only provide the grocery trade with exciting products to put on its shelves, but will help speed up the process of getting food to them in the most convenient way for them to handle it and get it off their shelves again.

Finally, a particularly significant factor, and an increasingly predominant one this year, will be competition. There are so many food manufacturers developing so many new and interesting products that the attempt to get the attention of the housewife and to win her support will become an increasing challenge.

15 TOP FOOD LEADERS VIEW 1956—

Plan now for the expanding "prime of life" age group

By **AUGUST A. BUSCH, JR.**
President
Anheuser-Busch, Inc.

The most far-reaching development of 1956 for the entire food and beverage business, in my opinion, is the entry into the market of an increasing number of people aged 21 or more.

During the last 10 years the number of people reaching age 21 has been declining, but this trend has reached its lowest point. An upward movement has started and will continue for at least 20 years, ultimately reaching the highest point ever experienced in the United States.

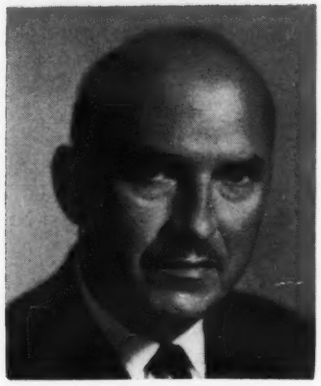
At present, there are 105 million people of beer drinking age in the country. By 1975, there will be 136 million persons of 20 years or older.

Surveys indicate that 52.2 percent of this 20-and-older group are beer drinkers, which makes an estimated 55 million beer drinkers in the United States at this time. This figure is expected to increase year after year, building up to an estimated 71 million beer drinkers in 1975—29 percent more than in 1955.

This upward trend becomes marked in 1956, and that is why I think it is the most important development of the year.

This trend vitally affects my own business. But, I think these figures also apply to the entire food and beverage industry. What they mean is that for the next 20 years, at least, there are going to be more people in the "prime of life". And they are going to have the appetites of people in the prime of life.

Along with this fact goes another significant related development. We are all aware that more and more beer is being bought by the housewife. She is becoming the family buyer for beer consumed in the house. This trend, too, will probably continue.



Expanding demand for "convenience" swells industry's growth potential

By **NATHAN CUMMINGS**
Chairman
Consolidated Foods Corp.

In our opinion, the single trend that will have the greatest effect on the food industry in 1956 is the ever-increasing demand for food products which require a minimum of time and kitchen work, to serve as appetizing, nourishing meals.

We feel that this trend will continue into the indefinite future, as long as the industry is able to discover and continue to develop new and better methods for taking burdensome, time-consuming chores out of the kitchen and putting them on an efficient plant production line where they belong.

We at Consolidated are confident not only that this trend will continue, but that the food industry will get a larger share of the consumer dollar in the years ahead. The underlying conditions which have produced this revolution, in our opinion, represent progress toward a higher standard of living, are economically sound, and are beneficial to consumers and producers alike.

Basically these conditions are the scarcity and high cost of domestic help, coupled with the desire of the American housewife to hold a regular job, or to devote more of her time to her children and her interests in the community outside the home — and less time to kitchen drudgery. These two factors, together, obviously represent a challenge to the food industry which has been accepted, and is being met more and more successfully as time goes on.

Our opinion is that the industry as a whole, and Consolidated in particular, are still in the early stages of this revolutionary change and that we must intensify our efforts to provide American families with an even better and more varied diet of easily-prepared, nutritious, tempting meals.

Rising birth rate insures growing demand

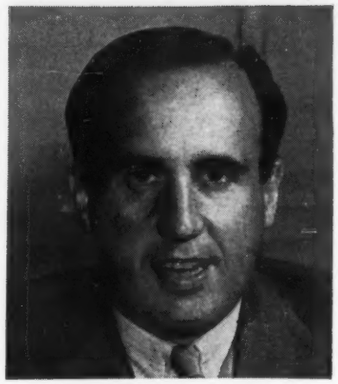
By **DAN F. GERBER**
President
Gerber Products Co.

I can speculate on a lot of factors that will affect the food industry next year, but one I am sure of is the large birth rate during 1955, which is expected to continue in 1956.

If we deduct 1,500,000 deaths from the 1955 births of 4,130,000 we have a net gain in population of about 2,500,000—which gives us an additional market as big as the 1950 city population of Cleveland, St. Louis, and Boston combined.

I just can't resist getting in a word or two about the birth rate, as it is so vital to our business, but, in the last analysis, no more vital to us than it is to the entire food industry. Right now, we are at a low point in marriage because, as an outgrowth of the very low birth rates in the '30's, the population in the age group of 18 to 24 years is at its lowest point.

Barring some horrible catastrophe that no one can foresee, the part of the population in this age group will increase very rapidly starting next year—at least 20 percent in the next five years; and from there on, the line goes almost straight up. This is a factor that is as sure as death and taxes, and it is vital to the food industry.



Shoppers now hunger for "better" products

By H. J. HEINZ II
President
H. J. Heinz Company

Recently, while discussing the FOOD BUSINESS question with my associates, one of our top vice presidents facetiously remarked that the answer lay in one word: Hunger.

He was correct, of course, and with more people to feed and with increasing incomes making those people more discriminating, those of us in the food industry must necessarily pay more attention to appetite appeal, quality, convenience, and nutritive value.

More than ever, those of us in the food industry, if we hope to continue the growth of our market, must see that we produce products in 1956 that are better than those we made in 1955.

We have had convenience in foods for 85 years and it is growing more and more important. But let us not become so enamored with convenience that we neglect quality and nutrition. No amount of advertising, promotion, or clever packaging will sell a product lacking in those elements.

In 1956 all of us should take a closer look at our products to determine whether they are the best we can make. We should ask ourselves whether we are doing all we know to produce products that offer the proper taste, quality, nutritive requirements and, yes, convenience.

Our vice president really wasn't being facetious, perhaps, when he remarked that hunger is the single factor that will have the greatest effect.

Hunger will be present as long as people live. Today they have enough dollars — plus — to satisfy that hunger. It is up to us, therefore, to produce products that not only satisfy a person's hunger, but convince him that his dollars are purchasing the best food experts can produce.

Industry's stability and balance point to orderly year ahead

By H. F. KRIMENDAHL
President
Stokely-Van Camp, Inc.

In my mind, the outstanding current factor of the food industry is its stability. Upon examination, no single or isolatable short-term development appears to have sufficient impact to produce a startling or dramatic effect upon the food industry in 1956. Principally this is so because of the competitive balance that prevails both in the production and distribution functions of the industry.

Increasing population, increasing urbanization, and the continuing demand for convenient living have presented a strong challenge to the food industry's capacity for growth and change. That challenge is being met, and on an economical basis, for the Bureau of Labor Statistics shows processed food costs now indexed at 101.4 as against an index of 118.4 for non-farm-and-food items.

This continuing trend towards convenience seems clearly to be the outstanding long-term factor which will affect the food industry in all of its phases. Otherwise, too, the food industry is in a stable position for 1956. Supplies of major lines and items are neither disruptively long or short. Government supported surpluses, particularly in an election year, are unlikely to be allowed to upset the consumer's food markets.

Purchasing power is strong, with projected continuing employment levels of 65,000,000 employed. Healthy inventories, industrial order backlog, construction activity and continuing consumer demands, combine to provide high purchasing power and willingness to spend. We have a level of national economy that should not allow purchasing power to be restricted by election tremors nor by any but the most severe industrial strife.

Challenge from other industries means toughest competition ever

By GEORGE H. COPPERS
President
National Biscuit Co.

Fierce and intense competition is the factor we believe will have the greatest effect on the food industry in 1956. Everyone in our industry will prosper in relation to the strength and vigor of his 1956 selling, advertising, and marketing effort.

Our belief that 1956 will be a selling and marketing year is based on the fact that the nation's consumers are back in the driver's seat. If we satisfy their wants and desires and excite their interest, they will do business with us. They have the money to spend, but they want to spread it as far as it will go. It isn't going to be easy. These consumers are going to take some convincing.

What does all this mean to those of us in the food business? Well, it is certainly going to call for all the sound planning, initiative, and aggressive selling we can muster. We will need new and improved products, attractive pricing, and standout packaging. Once we have these in the right combination we are going to have to spur our advertising and marketing programs to present these products with the same glitter that will surely surround the offerings of other industries. And, remember—the food store isn't just a food store any more. We are being challenged on our own ground.

The country's population continues to grow and per capita income is at an all-time high. The food industry has the production to support the intensive marketing and promoting of our products. But we must combine a lot of old-fashioned hustle with the most modern, intelligently-conceived selling techniques. We must be ready for the toughest, most spirited competition we have ever known.

15 TOP FOOD LEADERS VIEW 1956—

Role of "middleman" needs clearer definition

By **C. G. MORTIMER**
President
General Foods Corp.

Today it is almost impossible to say where production leaves off and marketing begins, or where marketing leaves off and distribution begins. The three functions are so interwoven that they combine into one continuous flow of service-to-the-consumer.

Today the wide-awake businessman's approach to the problems of serving the public must start at the consumers' end of the process. In effect, in 1956 and after, he must write practical specifications for new and ever more convenient products and services, and for getting them to the public with the least waste motion, at lowest cost.

Convenience takes many forms, some of which overlap or at least impinge on each other. In some instances a product accumulates several conveniences during its progress to the consumer, and often the distributive agencies add important factors of convenience in purchase, delivery, or service.

It is this fact that is so often overlooked by critics who harp on the "high cost of distribution", and level pot shots at the "middleman". Indeed, it seems to have escaped us that today a large percentage of the people who earn their livelihood in the world of business and finance are in effect "middle people", in the sense that they are engaged in one or more of the series of motions which form the continuous stream of production-marketing-distribution.

At step after step in the triple-process, some motion or series of motions adds new value or utility or convenience. Each motion serves three important ends: it makes jobs which help to support our economy; it builds new markets or broadens old ones, thus adding to business volume; and it creates capital and keeps money in motion.

Optimistic outlook encourages new construction, more training

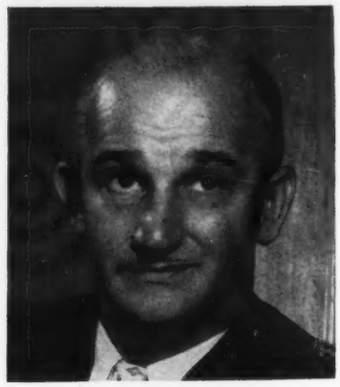
By **FREDERICK R. WEISMAN**
President
Hunt Foods, Inc.

I am glad to be included in the increasingly large group which believes that 1956 will be another good year for business, particularly for the food industry. If plans are fulfilled as anticipated, the industry will make significant progress in the year ahead. Many segments of the food industry appear to be geared to take bold steps in 1956.

Of perhaps more importance, there is an atmosphere of confidence and such indications of optimism as the following: (1) There are reports of extensive construction underway and planned for new supermarkets by corporate chains as well as many independents. Warehousing construction appears to be on the increase. In food manufacturing, expansion has been indicated in a number of significant areas. These construction plans for 1956 are one indication of optimism.

(2) Technological advances have provided us with new knowledge. Within the food industry everyone is seeking useful applications of this new knowledge. There is general receptivity to new ideas. Many construction changes could come about during the next few years as a result of new scientific developments.

(3) A greater interest has been shown in programs designed to attract and train personnel to meet heavier responsibilities. Thus, increasing attention is likely to be given to food industry personnel in 1956. Plans for building of our human resources are indicative of our industry's confidence in the future.



Relief for farmers may cause switches in consumer buying

By **WALTER F. SILBERSACK**
President
American Home Products Corp.

All obvious developments indicate a record year for the food industry in 1956, at least insofar as tonnage is concerned. Larger families and increased family income practically insure an increase in food consumption.

On the other hand, bumper crops throughout the world will make it increasingly difficult for this country to dispose of surplus food products.

Inasmuch as 1956 is an election year, we can be fairly certain that the farmers will get some relief. Whether they get it from the Republican Administration or the Democratic Congress, or both, remains to be seen.

Such relief in the form of an increase in parity prices will obviously be reflected in an increase in prices to the consumer. Important increases in any commodity group could cause consumer resistance toward the particular products. Naturally, the extent of the resistance would depend upon the degree of increase in price. However, even if such situations do develop, we can anticipate that the consumer will increase purchases of some other commodity and so maintain the expected increase in tonnage for the food industry as a whole.

The outlook for increased dollar volume and profits is not quite as obvious. Factors governing these developments are many and varied. Any one of several factors could emerge during the year as the one most important in its effect on the food industry.

The view ahead for 1956 by Charles P. McCormick, President, McCormick & Co., and Roy H. Park, President, Hines-Park Foods, Inc., will be found on pages 104 & 105.

FOOD PROCESSING

features its regular section on

SANITATION & MAINTENANCE

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cleaning stainless steel— easiest method is best method

regular cleaning with ordinary cleansers is usually enough—here are additional tips on how to take care of the best sanitation friend you have

WALTER KAISER, Assistant Editor
with **RICHARD E. PARET,**
Stainless Steel Specialist,
American Iron & Steel Institute

◀ Accessibility to interior of large stainless tanks makes it possible to use detergent solutions by hand when necessary

Recommended Cleansers & Detergents For Stainless Steel

Cleanser	How Applied	Remarks*
Grade FFF Italian Pumice, Bon Ami, Whiting, etc.	With damp cloth	Satisfactory for all finishes
Nu Steel — Liquid	With dry cloth	Satisfactory for all finishes if rubbed lightly. Will scratch No. 8 finish
Paste	" " "	
Household Cleansers	With damp cloth	Will scratch No. 4 finish
Grade F Italian Pumice	" " "	Will scratch No. 4 finish
Cooper's Stainless Steel Cleaner	" " "	Satisfactory for No. 4 finish
Allen Stainless Steel Polish	" " "	Scratches but leaves mirror reflection
Best Effect Chem. Co. Cleaner & Passivator	" " "	May scratch No. 4 finish but leaves clean surface
Detergent		
Sodium metasilicate	0.1 — 0.5% soln	Will remove grease, oil, milkstone, product residue. Use stronger solutions if needed
Trisodium phosphate	"	
Sodium tetraphosphate	"	
Sodium hexametaphosphate	"	
Tetrasodium pyrophosphate	"	

*Most common finishes are No. 4, 7, and 8 (mill finishes). No. 4 is bright, ground surface; No. 7 is high luster, polished surface; No. 8 is mirror finish.

What To Do About Common Hard-To-Clean Deposits

Deposit	Prevention	Removal
Hard water		Detergent solution
Milkstone		Stainless steel sponges, fibrous oakite
		5-15% hot or cold caustic soln
		Dilute sulfuric with organic inhibitor
		Very dilute muriatic with powerful inhibitor
		10-20% nitric soln
Baked-on splatter	Regular cleaning	Detergent or cleanser, making a paste with water or ammonia
Vapor condensation	Avoid condensation of liquids on surface, especially salty liquids	Stainless steel wool pads or scouring sponges
Heavy dirt	Regular cleaning	Organic solvents (on surfaces not in contact with food)
Grease		Detergent or cleanser
Product residue		5-15% caustic soln
Heat tint or discoloration	Do not overheat	Cleanser
	Do not heat empty container	Electrolytic cleaning
	Avoid localized heating	Warm 5% oxalic acid soln (for light discoloration)

Corrosion Inhibitors

When using acid solutions to remove accumulated deposits from stainless steel surfaces, it is generally necessary to supplement the solution with a corrosion inhibitor. A great many substances have been used for this purpose, some of which are listed below:

- Ammonium hydroxide
- Bone oil
- Calcium carbonate
- Calcium hydroxide
- Carbon disulfide
- Chromates
- Ethylamine
- Extract of linseed oil
- Glycerol mono-oleate
- Inorganic halides
- Lanolin
- Lecithin
- Molecularly dehydrated phosphates & organics
- Phosphates, hexameta, Na & Ca
- Phosphoric acid esters
- Sodium benzoate
- Sodium bicarbonate
- Sodium carbonate
- Sodium hydroxide
- Sodium nitrate
- Sodium nitrite
- Sodium silicate
- Sodium sulfite
- Thiodiglycol

Regular cleaning with brush or damp cloth facilitates removal of spill-over from this can filler. If allowed to dry and build up, deposits can become hard to remove

Use of metal scrapers and brushes should be avoided if possible. Only the most skillful user can avoid gouges and burrs, which will eventually require refinishing

Hardened, long standing accumulations can be removed with stainless steel wool. NEVER USE ORDINARY STEEL WOOL because it may leave imbedded particles which rust

cleaning stainless steel— easiest method is best method

regular cleaning with ordinary cleansers is usually enough—here are additional tips on how to take care of the best sanitation friend you have

WALTER KAISER, Assistant Editor
with **RICHARD E. PARET,**
Stainless Steel Specialist,
American Iron & Steel Institute

◀ Accessibility to interior of large stainless tanks makes it possible to use detergent solutions by hand when necessary

Recommended Cleansers & Detergents For Stainless Steel

Cleanser	How Applied	Remarks*
Grade FFF Italian Pumice, Bon Ami, Whiting, etc.	With damp cloth	Satisfactory for all finishes
Nu Steel — Liquid	With dry cloth	Satisfactory for all finishes if rubbed lightly. Will scratch No. 8 finish
Paste	" " "	
Household Cleansers	With damp cloth	Will scratch No. 4 finish
Grade F Italian Pumice	" " "	Will scratch No. 4 finish
Cooper's Stainless Steel Cleaner	" " "	Satisfactory for No. 4 finish
Allen Stainless Steel Polish	" " "	Scratches but leaves mirror reflection
Best Effect Chem. Co. Cleaner & Passivator	" " "	May scratch No. 4 finish but leaves clean surface
Detergent		
Sodium metasilicate	0.1 — 0.5% soln	Will remove grease, oil, milkstone, product residue. Use stronger solutions if needed
Trisodium phosphate	"	
Sodium tetraphosphate	"	
Sodium hexametaphosphate	"	
Tetrasodium pyrophosphate	"	

*Most common finishes are No. 4, 7, and 8 (mill finishes). No. 4 is bright, ground surface; No. 7 is high luster, polished surface; No. 8 is mirror finish.

What To Do About Common Hard-To-Clean Deposits

Deposit	Prevention	Removal
Hard water		Detergent solution
Milkstone		Stainless steel sponges, fibrous oakite
		5-15% hot or cold caustic soln
		Dilute sulfuric with organic inhibitor
		Very dilute muriatic with powerful inhibitor
		10-20% nitric soln
Baked-on splatter	Regular cleaning	Detergent or cleanser, making a paste with water or ammonia
Vapor condensation	Avoid condensation of liquids on surface, especially salty liquids	Stainless steel wool pads or scouring sponges
Heavy dirt	Regular cleaning	Organic solvents (on surfaces not in contact with food)
Grease		Detergent or cleanser
Product residue		5-15% cuastic soln
Heat tint or discoloration	Do not overheat	Cleanser
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Glycerol mono-oleate
Inorganic halides
Lanolin
Lecithin
Molecularly dehydrated phosphates & organics
Phosphates, hexameta, Na & Ca
Phosphoric acid esters
Sodium benzoate
Sodium bicarbonate
Sodium carbonate
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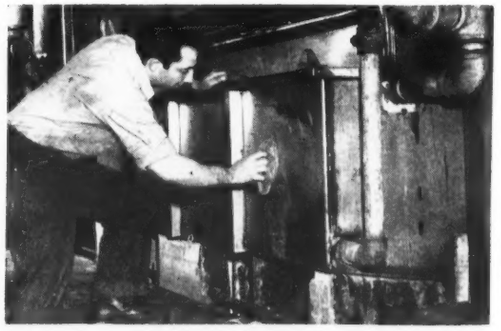


Hardened, long standing accumulations can be removed with stainless steel wool. NEVER USE ORDINARY STEEL WOOL because it may leave imbedded particles which rust

The human side of plant sanitation

by WALLACE F. JANSSEN

Assistant to the Commissioner

Food and Drug Administration
U.S. Department of Health, Education, and Welfare

Wallace F. Janssen is in charge of the public and trade information activities of the Food and Drug Administration. Prior to joining FDA, he served for several years as FP's Washington correspondent

Human behavior is the basic factor in most sanitation cases under our pure food and drug laws. The attitude of management, the habits of employes, the mistakes that stem from carelessness or ignorance, may all be summed up under that one term — the "human element". Here are two quotations showing significant differences in the attitude of plant managers.

"My bakers are pigs — so what can I do about it? It's better than a lot of bakeries in New York City". This plant owner was excusing himself for such conditions as dirty floors, dirty machinery, cigarette butts in the dough, and insect-laden equipment and materials.

"What's wrong with us is that we have been in the fish business so long we did not realize we were processing food". So said the president of a big fish-packing establishment after listening to the FDA inspector's report.

Obviously the second of these two plant owners had done some quick and serious thinking. He had already taken the first and most important step toward a solution of his problem.

An Inspector Puts His Foot in It

Of course, there are always some individuals who require something "dramatic" to make an adequate impression. But even a court action may not have as much effect as an incident which took place several years ago in a western plant. An FDA inspector was climbing about in the upper reaches of this rather jerry-built structure, looking for evidence of rodent infestation. On a level surface which formed the ceiling of an office on the floor below he discovered large quantities of rodent pellets. Hot on the trail, the inspector stepped beyond a safe footing, and his foot suddenly plunged through the fiberboard, causing a hail of pellets to descend on the desk of the manager in the office below.

Who was the most disconcerted — the inspector or the manager — would have been hard to determine. But while the manager might have been dubious as to the inspector's technique, he was certainly convinced by the demonstration, and a clean-up resulted.

Production First—Sanitation Last

A study of FDA sanitation cases will show that generalizations about "small firms" and "big firms" may be very misleading. The big plant can be just as dirty as the small one, and the small plant can be kept just as clean as the biggest. In checking up on some midwest poultry-slaughtering establishments an FDA inspector found both good and bad conditions among non-inspected plants (those lacking continuous inspection). In several plants he found offal troughs stopped up and overflowing, flooded workroom floors, fecal smears on birds in process, cutting of the gut containing fecal matter, and unsatisfactory internal and external washing. In each of these plants it was noticed that top-speed production was the important thing; cleanliness and maintenance were secondary.

Among the most objectionable plants was the branch of a large corporation; another was a small operator doing little or no interstate business. The rest of the operators were sacrificing some production in order to maintain sanitary operations.

The word "sacrificing" is used advisedly. What these operators really gave up was the unfair competitive advantage which sometimes goes to plants which cut corners on sanitation.

The "Superiority Complex"

Sometimes the big plant is handicapped by special and peculiar problems. One of these might be called the "superiority complex". The firm has such a fine plant, its management and employes are doing such a good job, that no one in the place can imagine anything going wrong! When this prevails, look out

for trouble! The X Bakery was such a plant. It had an elaborate system of sanitary control, periodical check-ups by outside sanitarians, and an excellent FDA record. But one day an inspector found a bucket elevator which had been overlooked by everybody. It was literally crawling with insect life. A good illustration of the point that "eternal vigilance is the price of sanitation".

Another rather common pitfall is the false sense of security which some firms seem to acquire when they hire an outside concern to help them with their sanitation problem. There is no question that such professional and specialized assistance may be of great value. However, plants are encounterd where the management has almost blindly relied on pest control services for the maintenance of sanitation in their factories. Of course, these are two different although related jobs — a fact which does not seem to have occurred to some plant operators.

Recently a gentleman came to an FDA inspection station in the southwest and informed the inspector that he had just taken a job as plant sanitarian in a large food manufacturing establishment. He said he had never been a sanitarian before — all his previous jobs had been that of janitor. He wanted the inspector to tell him all about the job and said he had about an hour before reporting to work!

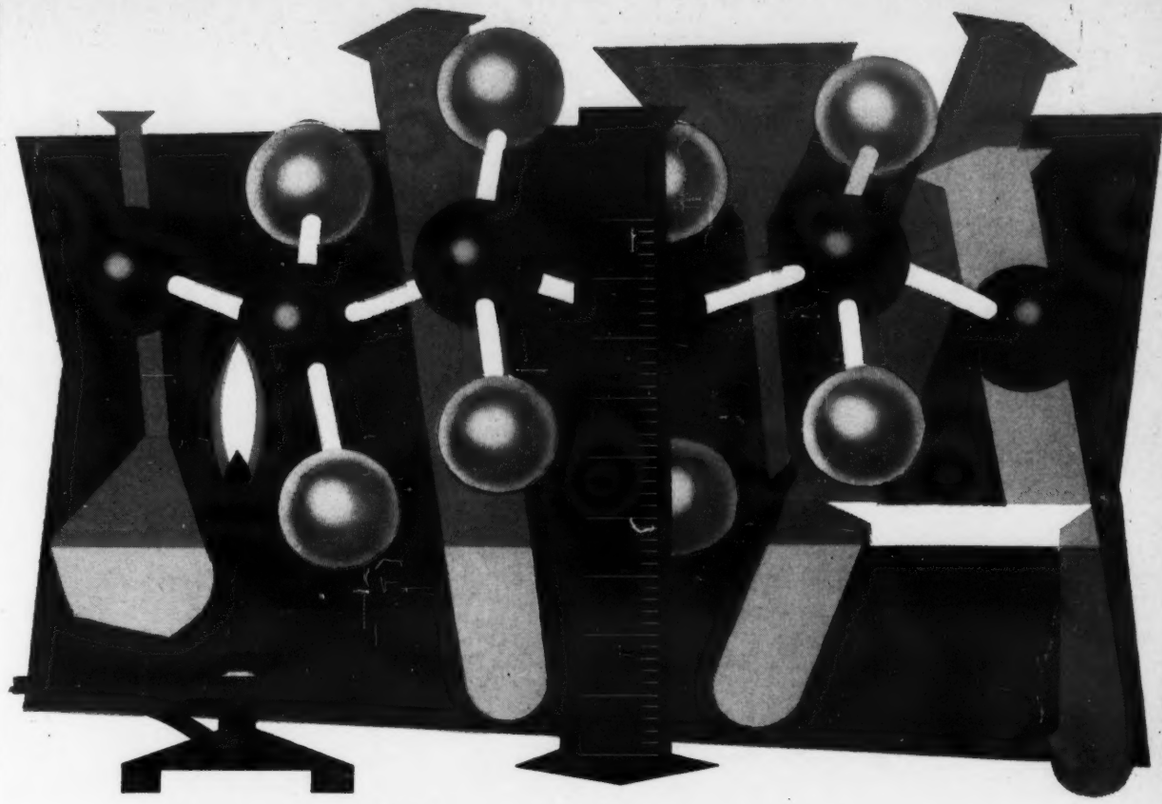
Probably the most difficult situations to correct are those in which the people involved have no real conception of what cleanliness means. This may be

due to ignorance, or to callousness or indifference to filthy surroundings. Even so, it is hard to understand how any food processor could have tolerated the conditions found several years ago in an Oklahoma plant. In this factory toilets were located on a balcony over the mixing department. Faulty plumbing and decaying floors contributed to a dangerous and disgusting situation.

Case of the Fur-Lined Noodles

Food contamination can occur from quite unexpected sources. Some months ago an FDA microanalyst was testing a sample of noodles for rodent hairs. He

(*Continued on next page*)



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When a process is taken from the test tube stage and put into plant-scale production, glass tubing must be translated into four inch pipe, beakers must become 20,000 gallon storage tanks. At this point, leading companies in the chemical industry have found that it pays to call in Chicago Steel Tank Company. You'll find the facilities and experienced personnel here to fabricate your job exactly to specifications and meet a dependable time schedule. If your process requires alloy vessels, you'll find engineers who no longer consider the problem of fabricating stainless and other alloys difficult, even to the most exacting code requirements.

If you are responsible for specifying process equipment, take a tip from the chemical industry, call on Chicago Steel Tank Company.

Write for booklet which illustrates and describes C.S.T. facilities.

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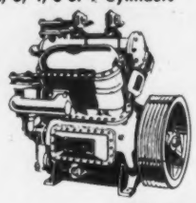
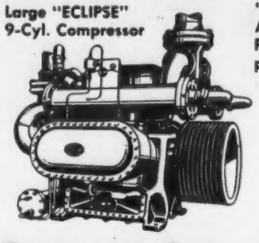
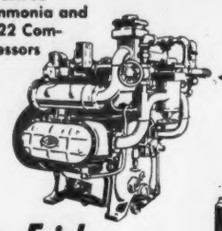
"ECLIPSE" Compressors, 2, 3, 4, 6 or 9 Cylinders

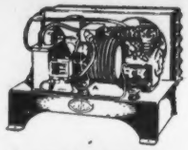


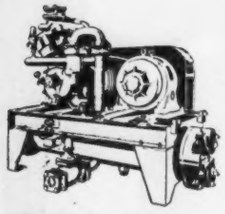
Large "ECLIPSE" 9-Cyl. Compressor



"ECLIPSE" Ammonia and F-22 Compressors




Accessible-Hermetic Units, ¼ thru 7½ Hp.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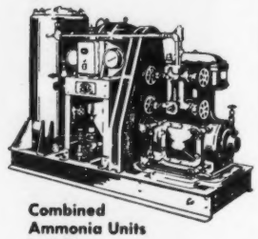
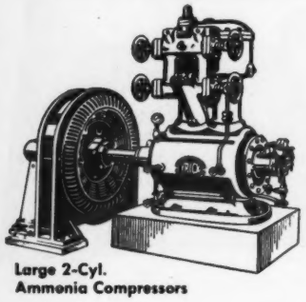
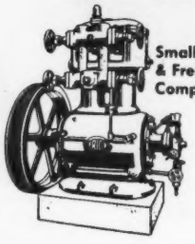
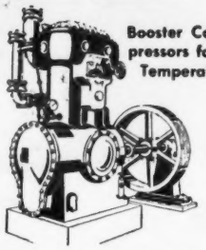
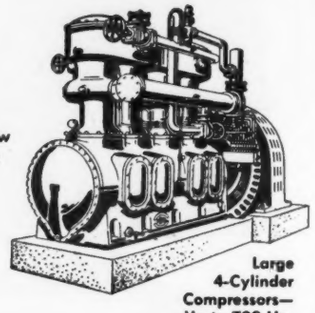

Combined Ammonia Units in 3 Sizes


Large 2-Cyl. Ammonia Compressors


Small Ammonia & Freon-22 Compressors.


Booster Compressors for Low Temperatures


Large 4-Cylinder Compressors—Up to 700 Hp.

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PISTON FILLER
Fills practically all types of containers . . . jars, bottles, cans or tubes. For viscous liquids, semi-liquids, creams, pastes and greases . . . FAST . . . EASY . . . SANITARY.

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For waters, acids, alcohols, light oils, medicinals, liquid soap.

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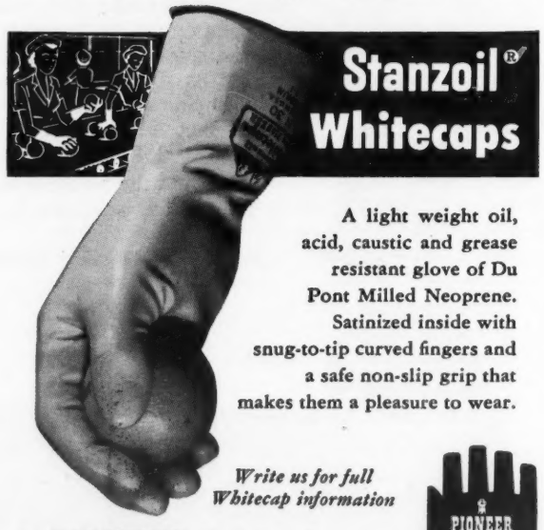
. . . Maintain Sanitary Conditions with



A light weight oil, acid, caustic and grease resistant glove of Du Pont Milled Neoprene. Satinized inside with snug-to-tip curved fingers and a safe non-slip grip that makes them a pleasure to wear.

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sanitation and maintenance

Plant Sanitation

(*Continued from preceding page*)

found none, but did identify some other hair fragments as coming from a yellow cat. The analyst predicted that an animal of that description would be found in the plant and that in some way its shedding hair was getting attached to the noodles. True to the laboratory conclusions, no evidence of rodents was found in the plant, but, sure enough, a large

yellow cat had the run of the premises. The mystery was completely solved when it was observed that the cat, in typical feline fashion, delighted in going-about rubbing its back and tail against the strips of noodles draped on racks to dry and hanging down within a few inches of the floor.

The inspector told the manager he should get rid of the cat. The manager objected. How could he keep the rats away? He even offered to cut his noodles shorter! But the inspector was obdurate. Cats, as well as rats, have no place in a food plant.

The Employe Problem

Many serious problems of food contamination are traceable to the habits of employes. Of course, the risk is greatest where there is a combination of low-grade labor, inadequate washroom facilities, and a food that is subject to handling (picking crab meat might be a good example). Even when toilet and washroom facilities are good, the background of employes may defeat their purpose. Migrant workers, particularly, may need to be taught to use such facilities, or employed only on jobs which do not involve handling of food.

During inspection of a tomato cannery an FDA man criticized the condition of privies located immediately outside the building. The operator remarked that he need not be concerned about this since they were used only by the foreign transient

labor who worked in the plant. He had forgotten that the law requires foods to be packed under sanitary conditions.

Sometimes plant owners do not really understand the nature and seriousness of bacterial contamination. A few years ago inspectors were making sanitary surveys in several Pacific Coast seafood plants. The owner of one of them was told that swabbings from his plant equipment and products showed gross contamination with *E. coli*. On a later visit this plant owner told the inspector he had immediately purchased an insecticide and sprayed equipment to "kill those bacteria bugs you told me about".

He said on the morning after, he had found them lying all over the plant, with their legs in the air — dead as doornails!

Folk Lore of Foods

Rather frequently FDA encounters the excuse that filth is harmless because the food products have been filtered, pasteurized, or sterilized. "What difference does it make? We fry it!" said one plant superintendent who admitted that his product was contaminated. Of course, under the law a filth-contaminated food is not made legal by cooking. Nor does cooking make filth appetizing to consumer.

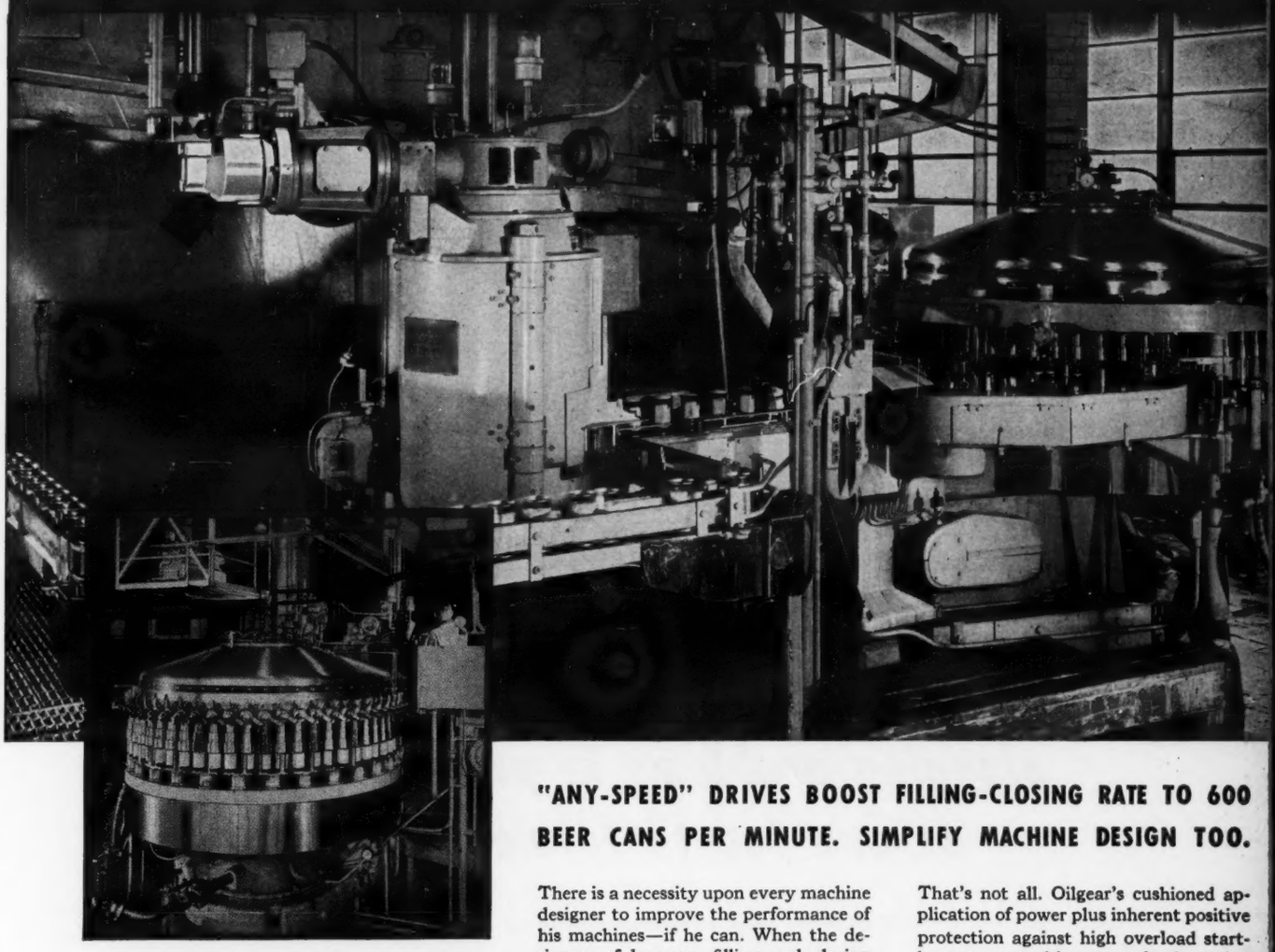
Certain superstitions and old wives' tales may also be associated with sanitation problems. For example, the idea that good aged cheese cannot be produced without an infestation with skippers, or that good vinegar requires the presence of vinegar flies and vinegar eels. It is only a step from this to the idea that bugs may be good eating.

(*To be concluded next month*)

For more information on product at right, specify CP 4259 . . . see information request blank opposite last page.

You too can discover

THE WAY UP IS OILGEAR



Beer Can Filling and Closing Machines equipped with Oilgear "ANY-SPEED" Drives are operating in many breweries. With Oilgear, beer can filling and closing production climbed from 360 to 600 cans a minute.

"ANY-SPEED" DRIVES BOOST FILLING-CLOSING RATE TO 600 BEER CANS PER MINUTE. SIMPLIFY MACHINE DESIGN TOO.

There is a necessity upon every machine designer to improve the performance of his machines—if he can. When the designers of beer-can filling and closing machines raised the rate from 150 to 360 cans per minute, the drive limit seemed to be reached. Yet, their users wanted more production *without spillage* or can conveyor problems.

Then these engineers tried Oilgear "ANY-SPEED" Drives . . . the Fluid Power and Control that gave them what they wanted and—even more.

These engineers stipulated: • accelerate machines to half speed in 2 seconds • accelerate machines to full speed in 5 seconds • decelerate and stop machines in 4/10 seconds • a filling-closing rate of 425 cans per minute.

The Oilgear drive accelerated and decelerated so smoothly, it actually provided: • acceleration to full speed in 2 seconds • deceleration and stop in 2/10 seconds • a filling-closing rate of 600 cans per minute.

That's not all. Oilgear's cushioned application of power plus inherent positive protection against high overload starting torques and lower overload running torques eliminated the need of mechanical slip clutches. Thus, the machine design is simplified and maintenance is negligible.

This smooth yet swift acceleration and deceleration that allows brewers to handle full cans without spilling is one of two tremendously important Oilgear advantages. Utterly variable, flexible and controllable speed is the other. These and other superiorities are writing new history in machine design. ***You ought to know the details of that history.*** Why don't you contact a nearby Oilgear engineer, or write to Milwaukee. No cost, but the profits may be great.

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PIONEERS...NOW THREE PLANTS FOR FLUID POWER

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THE OILGEAR COMPANY
1586 W. Pierce Street
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knocks corrosion, odor, plugging problems in pasteurizers at one fourth former costs

Chlorination stopped bacterial build-up . . . but dissipated too soon in hot water, until correct point for application was found

EDWARD L. ROTH, Technical Director
The Geo. Wiedemann Brewing Co.
as reported by **KARL ROBE,** Associate Editor

Problem: In breweries, as in other industries using pasteurizers and water cooling equipment, build-up of algae and slime-forming bacteria on the inside walls frequently becomes troublesome. Once build-up has started, operating costs go up, since the unit must be emptied and cleaned more often. Odors may frequently develop which can permeate the entire building. Iron-attacking bacteria cause pitting and corrosion, reducing the life of the equipment and increasing maintenance costs. And in the cataract or spray-type pasteurizer, clogging of the pans, screens, or spray nozzles can occur when bacterial growth breaks loose in the form of stringy material.

Solution: Here's how the Geo. Wiedemann Brewing Co. of Newport, Ky., attacked this problem: Tentative doses of copper sulphate were first tried, and were successful only for short periods. Several other combinations of germicidal and sequestering agents were successful for periods of up to eight or nine months. Then organisms seemed to build up an immunity, and treatment would have to be replaced by another combination. Quaternary ammonium salts were found effective for a period of between two and three years. These were relatively more costly than chlorine, which was subsequently tried.

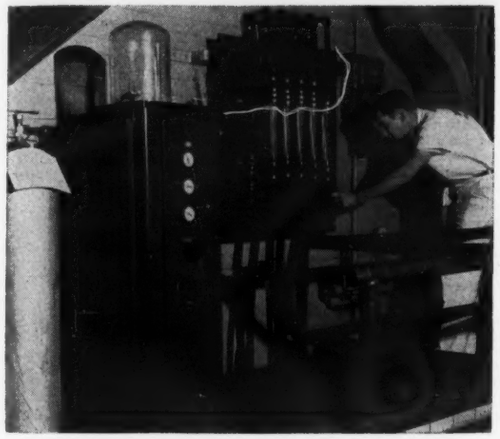
The first attempt at applying a gaseous chlorine solution was to add it to the make-up water, before it entered the heating system for the pasteurizing process. Chlorine added at this point dissipated when it reached the heating compartment.

As a last resort before giving up this method, the chlorine was added to the suction side of the pump which feeds the heated (140°F) water into the sprays of the pasteurizing compartment. In this case, the chlorine passed directly into the heat zone . . . thus proved successful for maintaining sufficient residual chlorine to lick the bacterial build-up problem.

Chlorine is furnished automatically to each of the four pasteurizing lines by one chlorinator, with a five-way distributor panel controlled by rotameters. At each point of application an automatic valve opens or closes with the start and stop of the recirculating pump motor on the pasteurizer.

The chlorinator is in operation about 12 hr/day, although the lines operate 16 to 20 hr/day. With the chlorine environment changing in this manner, the immunity factor has thus far effectively been avoided over a four-year span. Automatic controls stop chlorine flow on any line, when line to which it feeds stops. If all four lines stop as a unit, then chlorine by-passes into cistern, furnishing "slugging" action in entire system.

Technician William Ries takes sample of water from pasteurizer spray to check chlorine level



Technician Russell Hastings checks flow rate of chlorine to one line. Chlorine solution is added to each of four pasteurizers through this unit

Control Metal Content of Water

Another phase of the pasteurizer-water problem was that of the high iron content in the well water used for this phase of processing. Control of iron has been achieved by aerating the well water and subsequent filtration through sand and gravel filters. This treatment reduces the iron content from an original 2½-3½ ppm to about 0.3 ppm.

Breakdown of the high bicarbonate content due to heat in the pasteurizer produces carbonates which

(*Continued on page* 50)

Technical Director Roth inspects the constant-feeding proportioning pump which adds controlled amount of sodium hexametaphosphate to well water used in pasteurizers. 25 to 35 lb of the compound is placed in perforated 10 gal can, suspended in water in 50 gal drums. While one drum is in operation, crystals are dissolving in other. 4-6 ppm of sequestering agent is maintained in water used in pasteurizers

These Crane valves stay tight on soap oils and fatty acids

THE CASE HISTORY—Leakage through valve seats in raw materials supply lines posed a serious problem for Davies-Young Soap Co., Dayton—makers of various type soaps and cleaning fluids. Unwanted materials leaking past metering stations would infiltrate processing vats.

Four different makes of valves were tried before these Crane valves were installed. With all four, results were the same—seat leakage developed quickly; the valves lasted no more than 4 to 8 weeks.

Valve replacement costs were a factor on top of production losses.

The condition was remedied on installation of Crane No. 1670 Ni-Resist cast iron valves in January 1954. Eighteen months later—with no piping maintenance and no shutdowns whatsoever—the Crane valves are still holding tight. And they show no deteriorating effects from the fluids handled.

Crane Ni-Resist gates don't *look* much different from similar valves of other makes. Their difference is in properly designed, accurately finished seating of 18-8 SMo stainless steel—plus the *extra* erosion-corrosion resistance of Ni-Resist bodies and bonnets cast by Crane. Thrifty buyers know these valves have no "equal" for handling many hard-to-hold, mildly corrosive fluids.

You should have the new folder (AD2047) on these valves. Ask your local Crane Representative for a copy, or write to address below.

CRANE VALVES & FITTINGS

PIPE • KITCHENS • PLUMBING • HEATING

Since 1855—Crane Co., General Offices: Chicago 5, Ill. Branches and Wholesalers Serving All Areas

When inquiring check FP 4260 opposite last page

1956 BUYERS GUIDE for Aids to Sanitation and Employe Efficiency

All known suppliers of the items listed below were contacted to ascertain if their products are used in the food industry. The following Directory was prepared from their replies. Complete addresses of these suppliers are found on page 47.

This 1956 Buyers Guide is the first edition. It is therefore expected that some omissions have occurred, even though we have tried to make it as complete as possible. Your calling these omissions to our attention will be appreciated. In this way, you will help us make the next Buyers Guide more complete.

The Editors

See page 47 for suppliers' addresses

ANTISEPTICS
- Allied Safety Equipment Co.
- American Optical Co., Safety Products Div.
- Averill Equipment Co.
- Brenton Equipment Co.
- Davis Emergency Equipment Co., Inc.
- Dickson Safety Products Co.
- Engineering Supply Co.
- First Aid Service Co.
- Huntington Laboratories, Inc.
- Karel First Aid Supply Co.
- B. F. McDonald Co.
- Medical Supply Co.
- Protective Equipment Co.
- Rochester Safety Equipment Co.
- Safety Equipment Supply Co.
- Sindar Corp.
- Spokane Safety Appliance Co.
- Universal Safety & Fire Equipment Co., Inc.
- West Disinfecting Co.

APRONS
- Advance Glove Mfg. Co.
- Allied Safety Equipment Co.
- American Optical Co., Safety Products Div.
- Averill Equipment Co.
- Badger Safety Equipment Co.
- The Boyer-Campbell Co.
- Brenton Equipment Co.
- R. H. Buhrke Co.
- Charleston Rubber Co.
- Chem-Wear, Inc.
- Continental Rubber Works
- Continental Safety Equipment, Inc.
- Dayton Safety Supply Co.
- Dickson Safety Products Co.
- Ellis Safety Products Co.
- The Elwood Corp.
- Engineering Supply Co.
- Fisher Scientific Co.
- General Scientific Equipment Co.
- Goodall Rubber Co.
- B. F. Goodrich Co.
- Graft-Pelle Co.
- Guardian Safety Equipment Co.
- Industrial Gloves Co.
- Industrial Products Co.
- Karel First Aid Supply Co.
- V. E. Kennedy-Ingalls Co.
- Linen Supply Assn. of America
- W. P. & R. S. Mars Co.
- B. F. McDonald Co.
- Milburn Co.
- Miller Products Co., Inc.
- The M. F. Murdock Co.
- New Jersey Safety Equipment Co.
- Orr Safety Equipment Co.
- Parker Safety Equipment Co.
- Petra Mfg. Co.
- Plasco Safety Products Co.
- Protective Equipment Co.
- Pulmosan Safety Equipment Corp.
- Racine Glove Co., Inc.
- Richmond Rubber Co.
- Rochester Safety Equipment Co.
- Safepron Sales Co.
- Safety Equipment Distributing Co.
- Safety Equipment Supply Co.
- Safety Specialists, Inc.
- The H. M. Sawyer & Son Co.
- Robert L. Schmitt Co.
- Scientific Industrial Supply Co.
- Seco Safety Products Co.
- Singer Glove Mfg. Co.
- M. L. Snyder & Son, Inc.
- Spokane Safety Appliance Co.
- Standard Safety Equipment Co.
- Chas. A. Strelinger Co.
- Surety Rubber Co.
- Syracuse Supply Co., Industrial Supply Div.
- U. S. Rubber Co., Footwear & General Products Div.
- U. S. Safety Service Co. (plastic)
- Universal Safety Equipment Co.
- Universal Safety & Fire Equipment Co., Inc.
- Wahlert Safety Products Corp.
- West Disinfecting Co.
- Wheeler Protective Apparel, Inc.
- Williams & Co., Inc.
- W. S. Wilson Corp.

ATHLETE'S FOOT RETARDANTS
- Allied Safety Equipment Co.
- First Aid Service Co.
- Hillyard Chemical Co.
- Huntington Laboratories, Inc.
- Karel First Aid Supply Co.
- B. F. McDonald Co.
- New Jersey Safety Equipment Co.
- Onox, Inc.
- Protective Equipment Co.
- Rochester Safety Equipment Co.
- Safety Equipment Supply Co.
- Sani-Mist Inc.
- Robert L. Schmitt Co.
- Spokane Safety Appliance Co.
- Universal Safety & Fire Equipment Co., Inc.
- West Disinfecting Co.

BANDAGES, FIRST AID
- Allied Safety Equipment Co.
- Averill Equipment Co.
- Brenton Equipment Co.
- Continental Safety Equipment, Inc.
- L. N. Curtis & Sons
- Davis Emergency Equipment Co., Inc.
- Dayton Safety Supply Co.
- Delta Fire & Safety Equipment Co.
- Dickson Safety Products Co.
- The Elwood Corp.
- Engineering Supply Co.
- First Aid Service Co.
- General Scientific Equipment Co.
- Guardian Safety Equipment Co.
- A. E. Halperin Co., Inc.
- Karel First Aid Supply Co.
- W. P. & R. S. Mars Co.
- B. F. McDonald Co.
- Protective Equipment Co.
- Rochester Safety Equipment Co.
- Safety Equipment Distributing Co.
- Safety Equipment Supply Co.
- Safety First Supply Co.
- Safety Specialists, Inc.
- Scallan Supply Co.
- Robert L. Schmitt Co.
- Spokane Safety Appliance Co.
- Universal Safety Equipment Co.
- Universal Safety & Fire Equipment Co., Inc.
- Wahlert Safety Products Corp.
- Williams & Co., Inc.
- W. S. Wilson Corp.

BOOTS, RUBBER
- Allied Safety Equipment Co.
- Beacon Falls Rubber Footwear
- Brenton Equipment Co.
- Cherry-Burrell Corp.
- Continental Rubber Works
- Continental Safety Equipment, Inc.
- L. N. Curtis & Sons
- Dayton Safety Supply Co.
- Delta Fire & Safety Equipment Co.
- Dickson Safety Products Co.
- Ellis Safety Products Co.
- The Elwood Corp.
- Engineering Supply Co.
- Fisher Scientific Co.
- Fulton Supply Co.
- Goodall Rubber Co.
- Hood Rubber Co.
- Industrial Products Co.
- Lehigh Safety Shoe Co., Inc.
- W. P. & R. S. Mars Co.
- Miller Products Co., Inc.
- The M. F. Murdock Co.
- New Jersey Safety Equipment Co.
- Parker Safety Equipment Co.
- Plasco Safety Products Co.
- RefrigiWear Clothing Co.
- Richmond Rubber Co.
- Rochester Safety Equipment Co.
- Safety Equipment Supply Co.
- Robert L. Schmitt Co.
- Scientific Industrial Supply Co.
- Seco Safety Products Co.
- M. L. Snyder & Son, Inc.
- Spokane Safety Appliance Co.
- Surety Rubber Co.
- U. S. Rubber Co., Footwear & General Products Div.
- Wahlert Safety Products Corp.
- W. S. Wilson Corp.

CABINETS, TOWEL *(See Towel Cabinets)*

CAPS, DISPOSABLE
- Averill Equipment Co.
- General Scientific Equipment Co.
- Karel First Aid Supply Co.
- Linen Supply Assn. of America
- Rochester Safety Equipment Co.
- Safety Equipment Supply Co.
- Scientific Industrial Supply Co.

CAPS, WASHABLE
- Angelica Uniform Co.
- Averill Equipment Co.
- Badger Safety Equipment Co.
- Dickson Safety Products Co.
- Engineering Supply Co.
- General Scientific Equipment Co.
- Institute of Industrial Launderers
- V. E. Kennedy-Ingalls Co.
- Linen Supply Assn. of America
- RefrigiWear Clothing Co.
- Rochester Safety Equipment Co.
- Safety Equipment Supply Co.
- Safety Specialists, Inc.
- Scientific Industrial Supply Co.
- Syracuse Supply Co., Industrial Supply Div.
- Weather-All Insulated Products

CLOTHING, ACID RESISTANT
- Allied Safety Equipment Co.
- American Allsafe Co., Inc.
- American Optical Co., Safety Products Div.
- Averill Equipment Co.
- Badger Safety Equipment Co.
- The Boyer-Campbell Co.
- Brenton Equipment Co.
- Central Safety Equipment Co.
- Chem-Wear, Inc.
- Chicago Eye Shield Co.
- Continental Rubber Works

Buyers Guide

Continental Safety Equipment, Inc.
Dayton Safety Supply Co.
Delta Fire & Safety Equipment Co.
Dickson Safety Products Co.
Ellis Safety Products Co.
The Elwood Corp.
Engineering Supply Co.
Fisher Scientific Co.
L. A. Foster Co.
Fulton Supply Co.
General Scientific Equipment Co.
B. F. Goodrich Co.
Graft-Pelle Co.
Guardian Safety Equipment Co.
Industrial Gloves Co.
Industrial Products Co.
Institute of Industrial Launderers
Karel First Aid Supply Co.
V. E. Kennedy-Ingalls Co.
W. P. & R. S. Mars Co.
B. F. McDonald Co.
Milburn Co.
Miller Products Co., Inc.
The M. F. Murdock Co.
New Jersey Safety Equipment Co.
Orr Safety Equipment Co.
Parker Safety Equipment Co.
Protective Equipment Co.
Pulmosan Safety Equipment Corp.
Richmond Rubber Co.
Rochester Safety Equipment Co.
Safety Equipment Distributing Co.
Safety Equipment Supply Co.
Safety First Supply Co.
Safety Specialists, Inc.
The H. M. Sawyer & Son Co.
Scallan Supply Co.
Robert L. Schmitt Co.
Scientific Industrial Supply Co.
Seco Safety Products Co.
M. L. Snyder & Son, Inc.
Spokane Safety Appliance Co.
Standard Safety Equipment Co.
Syracuse Supply Co., Industrial Supply Div.
U. S. Rubber Co., Footwear & General Products Div.
Universal Safety Equipment Co.
Universal Safety & Fire Equipment Co., Inc.
Wahlert Safety Products Corp.
West Disinfecting Co.
Williams & Co., Inc.
W. S. Wilson Corp.
Worklon, Inc.

CLOTHING, PROTECTIVE

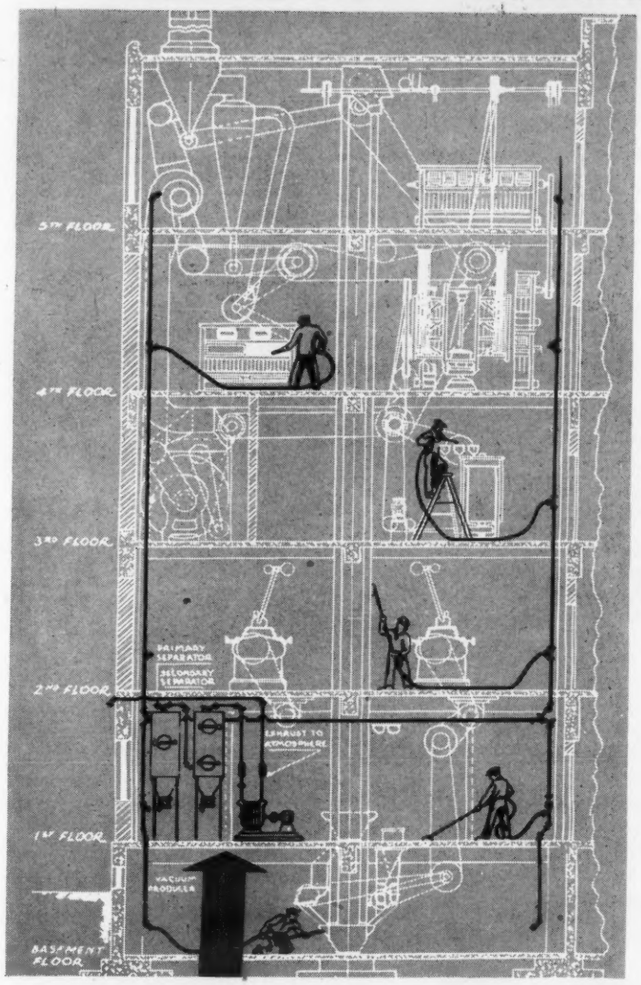
Advance Glove Mfg. Co.
Allied Safety Equipment Co.
American Allsafe Co., Inc.
American Optical Co., Safety Products Div.
Averill Equipment Co.
Badger Safety Equipment Co.
The Boyer-Campbell Co.
Brenton Equipment Co.
Central Safety Equipment Co.
Continental Rubber Works
Continental Safety Equipment, Inc.
Dayton Safety Supply Co.
Delta Fire & Safety Equipment Co.
Dickson Safety Products Co.
Ellis Safety Products Co.
The Elwood Corp.
Engineering Supply Co.
Fisher Scientific Co.
L. A. Foster Co.
General Scientific Equipment Co.
B. F. Goodrich Co.
Graft-Pelle Co.
Guardian Safety Equipment Co.
Industrial Gloves Co.
Industrial Products Co.
Institute of Industrial Launderers
V. E. Kennedy-Ingalls Co.
W. P. & R. S. Mars Co.
B. F. McDonald Co.
Milburn Co.
Miller Products Co., Inc.
The M. F. Murdock Co.
New Jersey Safety Equipment Co.
Orr Safety Equipment Co.
Parker Safety Equipment Co.
Petra Mfg. Co.
Protective Equipment Co.

See page 47 for suppliers' addresses

(*Continued on next page*)

HOFFMAN'S ENGINEERED SYSTEMS designed to do the tough jobs in industry

HOFFMAN VACUUM SYSTEMS KEEP PLANT CLEANER PROTECT PRODUCT PURITY—AT LOWEST COST



Cleaning that is deep and thorough—dry, fast and effective is HOFFMAN High-Suction Vacuum Cleaning.

Using powerful suction, HOFFMAN equipment virtually *dry-scours* your entire plant—without need for shutting down or interfering with normal operations. The combination of hose and the correct size and shape of cleaning tools makes this high-power vacuum easy to apply to all surfaces . . . floors, walls, ceilings, pipes, conveyors, machines, everything!

Complete removal of dust, dirt, and spillage for central disposal gives you a *clean* house. There are no feeding grounds for insects, and little opportunity for insects surviving the "pick-up" of overall cleaning. Dust hazards are minimized by eliminating any appreciable accumulation.

Let Hoffman engineers show you the full benefit of this modern, efficient economical cleaning method—they'll be glad to make a complete survey of your cleaning needs. With over twenty years experience in the design of systems for every size and type of food plant, HOFFMAN engineers can assist you with recommendations that are authoritative and unbiased—HOFFMAN builds both stationary and portable equipment. Send for your copy of illustrated bulletin on HOFFMAN Heavy Duty Vacuum Cleaning.

Please write—

U.S. HOFFMAN MACHINERY CORP.
AIR APPLIANCE DIVISION
DEPT. FP, 105 FOURTH AVENUE, NEW YORK 3, N. Y.

AIR APPLIANCE DIVISION
Multistage Centrifugal Blowers and Exhausters
Pneumatic Conveying Equipment
Industrial Vacuum Cleaning—Portable and Stationary Systems
Continuous Metal Strip Driers
"Smoothflow" Fittings and Tubing

INDUSTRIAL FILTRATION DIVISION
Machine Tool Coolant Clarifiers—Flotation, Mechanical, and Magnetic.
Lubricating and Insulating Oil Conditioners, Filters, and Vaporizers
Solvent Recovery Systems—Vacuum Stills and Filters

ORDNANCE EQUIPMENT DIVISION
Special Pneumatic Conveying Systems
High Efficiency Centrifugal Separators
Stationary and Portable Vacuum Cleaning Equipment
Process Equipment
Pneumatic Systems for Radioactive Materials

When inquiring check FP 4261 opposite last page

"Look! It soaks up grease just like a sponge."

LAN-O-KLEEN removes 95% of all dirt and grime encountered in industry.

Easily – and safely!

LAN-O-KLEEN helps to protect the skin as it cleans. WEST – *in pioneering the development of "double-action" industrial cleaners* – was the first to impregnate *beneficial amounts* of free lanolin into a corn meal type hand cleaner.

LAN-O-KLEEN is economical to use. It bulks greater than most other hand cleaners – *therefore goes farther per pound.* Too, the sturdy LAN-O-KLEEN dispenser rations just the right amount to do a thorough cleansing job.

LAN-O-KLEEN is one of a group of WEST products formulated for the prevention and control of industrial dermatitis. Workers' hands are their most valuable tools. By helping to prevent dermatitis, you can help keep costs down – *by keeping workers on the job at maximum efficiency.*

A specially trained WEST representative will gladly tell you more about LAN-O-KLEEN and the other products used in the WEST Dermatitis Control Plan. Just write or call your local WEST office.

OLDEST AND LARGEST COMPANY OF ITS KIND IN THE WORLD

75th ANNIVERSARY WEST DISINFECTING Company

FREE BOOKLET

Use your business letterhead to request our 24 page booklet "The Control of Dermatitis in Industry."

WEST DISINFECTING COMPANY
Dept. 9, 42-16 West St.
Long Island City 1, N. Y.

Branches in Principal Cities • *In Canada: 5621-23 Casgrain Avenue, Montreal*

When inquiring check FP 4262 opposite last page

Buyers Guide

(Continued from preceding page)

Pulmosan Safety Equipment Corp.
Racine Glove Co., Inc.
RefrigiWear Clothing Co.
Richmond Rubber Co.
Rochester Safety Equipment Co.
Safety Equipment Distributing Co.
Safety Equipment Supply Co.
Safety First Supply Co.
Safety Specialists, Inc.
The H. M. Sawyer & Son Co.
Scallan Supply Co.
Robert L. Schmitt Co.
Scientific Industrial Supply Co.
Seco Safety Products Co.
M. L. Snyder & Son, Inc.
Spokane Safety Appliance Co.
Standard Safety Equipment Co.
Chas A. Strelinger Co.
Syracuse Supply Co., Industrial Supply Div.
U. S. Rubber Co., Footwear & General Products Div.
Universal Safety Equipment Co.
Universal Safety & Fire Equipment Co., Inc.
Wahlert Safety Products Corp.
Weather-All Insulated Products
West Disinfecting Co.
Wheeler Protective Apparel, Inc.
Williams & Co., Inc.
W. S. Wilson Corp.

CLOTHING, RUBBER

Allied Safety Equipment Co.
American Allsafe Co., Inc.
Averill Equipment Co.
Badger Safety Equipment Co.
The Boyer-Campbell Co.
Brenton Equipment Co.
Continental Rubber Works
Dayton Safety Supply Co.
Dickson Safety Products Co.
Ellis Safety Products Co.
The Elwood Corp.
Engineering Supply Co.
Fisher Scientific Co.
L. A. Foster Co.
General Scientific Equipment Co.
Goodall Rubber Co.
B. F. Goodrich Co.
Guardian Safety Equipment Co.
Industrial Gloves Co.
Industrial Products Co.
Karel First Aid Supply Co.
V. E. Kennedy-Ingalls Co.
W. P. & R. S. Mars Co.
B. F. McDonald Co.
Miller Products Co., Inc.
The M. F. Murdock Co.
New Jersey Safety Equipment Co.
Orr Safety Equipment Co.
Parker Safety Equipment Co.
Pulmosan Safety Equipment Corp.
Richmond Rubber Co.
Rochester Safety Equipment Co.
Safety Equipment Distributing Co.
Safety Equipment Supply Co.
Safety First Supply Co.
Safety Specialists, Inc.
The H. M. Sawyer & Son Co.
Scallan Supply Co.
Robert L. Schmitt Co.
Scientific Industrial Supply Co.
Seco Safety Products Co.
M. L. Snyder & Son, Inc.
Spokane Safety Appliance Co.
Standard Safety Equipment Co.
Syracuse Supply Co., Industrial Supply Div.
U. S. Rubber Co., Footwear & General Products Div.
Universal Safety Equipment Co., Inc.
Universal Safety & Fire Equipment Co., Inc.
Wahlert Safety Products Corp.
Williams & Co., Inc.
W. S. Wilson Corp.

CLOTHING, WEATHERPROOF

American Allsafe Co., Inc.
American Optical Co., Safety Products Div.
Averill Equipment Co.
Badger Safety Equipment Co.
The Boyer-Campbell Co.
Brenton Equipment Co.
Continental Rubber Works
Continental Safety Equipment, Inc.
Dayton Safety Supply Co.
Dickson Safety Products Co.
The Elwood Corp.
Engineering Supply Co.
Fulton Supply Co.
General Scientific Equipment Co.
B. F. Goodrich Co.
Guardian Safety Equipment Co.
Industrial Products Co.
Institute of Industrial Launderers
V. E. Kennedy-Ingalls Co.
B. F. McDonald Co.
Milburn Co.
Miller Products Co., Inc.
The M. F. Murdock Co.
New Jersey Safety Equipment Co.
Orr Safety Equipment Co.
Parker Safety Equipment Co.
RefrigiWear Clothing Co.
Richmond Rubber Co.
Rochester Safety Equipment Co.
Safety Equipment Distributing Co.
Safety Equipment Supply Co.
The H. M. Sawyer & Son Co.
Robert L. Schmitt Co.
Scientific Industrial Supply Co.
Seco Safety Products Co.
M. L. Snyder & Son, Inc.
Spokane Safety Appliance Co.
U. S. Rubber Co., Footwear & General Products Div.
Universal Safety Equipment Co.
Universal Safety & Fire Equipment Co., Inc.
Wahlert Safety Products Corp.
Weather-All Insulated Products
W. S. Wilson Corp.

CLOTHING, WORK UNIFORMS

Angelica Uniform Co.
Badger Safety Equipment Co.
Dayton Safety Supply Co.
Ellis Safety Products Co.
General Scientific Equipment Co.
B. F Goodrich Co.
Institute of Industrial Launderers
V. E. Kennedy-Ingalls Co.
Linen Supply Assn. of America
Rochester Safety Equipment Co.
Safety Specialists, Inc.
Scientific Industrial Supply Co.
Weather-All Insulated Products
W. S. Wilson Corp.
Worklon, Inc.

DISINFECTANTS & DEODORANTS

Brooks Chemical, Inc.
Brulin & Co., Inc.
Cherry-Burrell Corp.
Hillyard Chemical Co.
Huntington Laboratories, Inc.
Karel First Aid Supply Co.
Olin Mathieson Chemical Corp., Industrial Chemicals Div.
Rochester Safety Equipment Co.
Scientific Industrial Supply Co.
Sindar Corp.
Spokane Safety Appliance Co.
Sugar Beet Products Co., Chemical By-Products Div.
Vestal, Inc.
West Disinfecting Co.
Wyandotte Chemicals Corp., J. B. Ford Div.

DISPENSARY EQUIPMENT

Allied Safety Equipment Co.
Bomgardner Mfg. Co.
Dickson Safety Products Co.
First Aid Service Co.
General Scientific Equipment Co.
Industrial Products Co.
Karel First Aid Supply Co.
Rochester Safety Equipment Co.

DISPENSERS, FOOT SPRAY

Allied Safety Equipment Co.
General Scientific Equipment Co.
B. F. McDonald Co.
Rochester Safety Equipment Co.
Sani-Mist Inc.
Robert L. Schmitt Co.
Spokane Safety Appliance Co.
Vestal, Inc.

DISPENSERS, SANITARY NAPKINS

General Scientific Equipment Co.
A. E. Halperin Co., Inc.
Karel First Aid Supply Co.
Linen Supply Assn. of America

See page 47 for suppliers' addresses

Buyers Guide

Rochester Safety Equipment Co.
Safety Equipment Supply Co.
Spokane Safety Appliance Co.
West Disinfecting Co.

DISPENSERS, SOAP *(See Soap Dispensers)*

DISPENSERS, TOWEL
Bennett Mfg. Co. (paper)
Philip Carey Mfg. Co.
Hillyard Chemical Co.
Huntington Laboratories, Inc.
Linen Supply Assn. of America
Rochester Safety Equipment Co.
Scott Paper Co.
West Disinfecting Co.

DRINKING CUPS, PAPER
Continental Can Co.
Engineering Supply Co.
Karel First Aid Supply Co.
Lily-Tulip Cup Corp.
Rochester Safety Equipment Co.
Scientific Industrial Supply Co.
Spokane Safety Appliance Co.
West Disinfecting Co.

DRINKING FOUNTAINS
Fulton Supply Co.
Haws Drinking Faucet Co.
Kohler Co.
New Jersey Safety Equipment Co.
Rochester Safety Equipment Co.
Safety Equipment Distributing Co.
Sunroc Corp.
Halsey W. Taylor Co.
Williams & Co., Inc.

DRINKING FOUNTAINS, PORTABLE
Dickson Safety Products Co.
The Elwood Corp.
Haws Drinking Faucet Co.
Industrial Products Co.
W. P. & R. S. Mars Co.
B. F. McDonald Co.
New Jersey Safety Equipment Co.
Rochester Safety Equipment Co.
Spokane Safety Appliance Co.
Syracuse Supply Co., Industrial Supply Div.

DRYERS, FACE & HAND
Huntington Laboratories, Inc.
Scott Paper Co.
Spokane Safety Appliance Co.

EYE SHIELDS
Allied Safety Equipment Co.
American Optical Co., Safety Products Div.
Averill Equipment Co.
Badger Safety Equipment Co.
Brenton Equipment Co.
Central Safety Equipment Co.
Chicago Eye Shield Co.
Continental Safety Equipment, Inc.
L. N. Curtis & Sons
Dayton Safety Supply Co.
Delta Fire & Safety Equipment Co.
Dickson Safety Products Co.
Dockson Corp.
Ellis Safety Products Co.
The Elwood Corp.
Engineering Supply Co.
Fendall Co.
Fibre-Metal Products Co.
Fisher Scientific Co.
L. A. Foster Co.
Fulton Supply Co.
General Scientific Equipment Co.
Graft-Pelle Co.
Guardian Safety Equipment Co.
Industrial Products Co.
Jackson Products, Inc.
V. E. Kennedy-Ingalls Co.
W. P. & R. S. Mars Co.
Martindale Electric Co., Inc.
B. F. McDonald Co.
New Jersey Safety Equipment Co.
Orr Safety Equipment Co.
Parker Safety Equipment Co.
Pennsylvania Optical Co.
Pulmosan Safety Equipment Corp.
Rochester Safety Equipment Co.
Safety Equipment Distributing Co.

See page 47 for suppliers' addresses

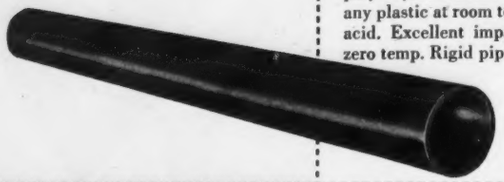
(Continued on next page)

OPW CORPORATION 2721 COLERAIN AVE., CINCINNATI 25, OHIO

When inquiring check FP 4263 opposite last page

STAYS TOUGH AT SUB-ZERO TEMPERATURES

ACE PARIAN . . . odorless, tasteless, rigid polyethylene. Best chemical resistance of any plastic at room temp. except to acetic acid. Excellent impact strength at sub-zero temp. Rigid pipe ½" to 2". *Bul. 351.*



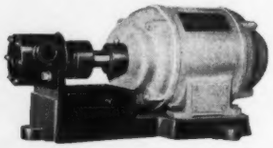
ACE chemical equipment

"more resistant to more corrosives"

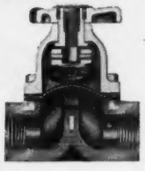
From this "super-market" of corrosion-resistant equipment . . . backed by more than a century of engineering experience . . . you can select with confidence.

MIGHTY MIDGET

for pumping acids



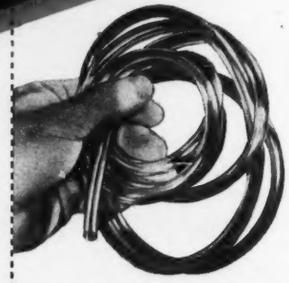
Jabsco neoprene-impeller pump made of ACE hard rubber outlasts, out-pumps anything in its pressure, size and price class. Capacity from 15 gpm. at 22 ft. head to 5 gpm. at 72 ft. head. *Bulletin 97-A.*



VALVES

for all-plastic piping systems

Trouble-free plastic diaphragm valves . . . choice of general-purpose rubber-plastic blend, Ace Parian (polyethylene) or Ace Saran. Handles most corrosive chemicals and food ingredients. Sizes ½" to 2", 50 psi. at 77° F. *Bulletins 80 and 351.*



1001 USES *for ACE-FLEX Tubing*

Excellent chemical-resistant, all-purpose flexible plastic tubing. Sparkling clear, easy to clean, odorless, non-toxic, can be steam-sterilized. ⅛" to 1" ID. *Bul. 66.*

ACE rubber and plastic products

AMERICAN HARD RUBBER COMPANY

93 WORTH STREET • NEW YORK 13, N. Y.

When inquiring check FP 4264 opposite last page

Buyers Guide

(Continued from preceding page)

Safety Equipment Supply Co.
Safety First Supply Co.
Safety Specialists, Inc.
Scallan Supply Co.
Robert L. Schmitt Co.
Scientific Industrial Supply Co.
Seco Safety Products Co.
Sellstrom Mfg. Co.
Spokane Safety Appliance Co.
Standard Safety Equipment Co.
Chas. A. Strelinger Co.
Syracuse Supply Co., Industrial Supply Div.
U. S. Safety Service Co.
Universal Safety Equipment Co.
Universal Safety & Fire Equipment Co., Inc.
Wahlert Safety Products Corp.
Watchemoket Optical Co., Inc.
Welsh Mfg. Co., Industrial Div.
Williams & Co., Inc.
Willson Products, Inc.
W. S. Wilson Corp.

EYE WASHING FOUNTAINS

Allied Safety Equipment Co.
Averill Equipment Co.
Benson & Associates, Inc.
Brenton Equipment Co.
Central Safety Equipment Co.
Continental Safety Equipment, Inc.
L. N. Curtis & Sons
Dayton Safety Supply Co.
Delta Fire & Safety Equipment Co.
Dickson Safety Products Co.
The Elwood Corp.
General Scientific Equipment Co.
Graft-Pelle Co.
Guardian Safety Equipment Co.
Haws Drinking Faucet Co.
Industrial Products Co.
Karel First Aid Supply Co.
Logan Emergency Showers, Inc.
W. P. & R. S. Mars Co.
B. F. McDonald Co.
New Jersey Safety Equipment Co.
Orr Safety Equipment Co.
Pulmosan Safety Equipment Corp.
Rochester Safety Equipment Co.
Safety Equipment Distributing Co.
Safety Equipment Supply Co.
Safety First Supply Co.
Safety Specialists, Inc.
Scallan Supply Co.
Robert L. Schmitt Co.
Seco Safety Products Co.
Speakman Co.
Spokane Safety Appliance Co.
Sunroc Corp.
Universal Safety Equipment Co.
Universal Safety & Fire Equipment Co., Inc.
Wahlert Safety Products Corp.
W. S. Wilson Corp.

FACE SHIELDS

Allied Safety Equipment Co.
American Allsafe Co., Inc.
American Optical Co., Safety Products Div.
Averill Equipment Co.
Badger Safety Equipment Co.
Brenton Equipment Co.
Central Safety Equipment Co.
Continental Safety Equipment, Inc.
L. N. Curtis & Sons
Davis Emergency Equipment Co., Inc.
Dayton Safety Supply Co.
Delta Fire & Safety Equipment Co.
Dickson Safety Products Co.
Dockson Corp.
Ellis Safety Products Co.
The Elwood Corp.
Engineering Supply Co.
Fendall Co.
Fibre-Metal Products Co.
Fisher Scientific Co.
L. A. Foster Co.
Fulton Supply Co.
General Scientific Equipment Co.
Graft-Pelle Co.
Guardian Safety Equipment Co.
J. E. Haseltine & Co.
Industrial Products Co.
Jackson Products, Inc.
V. E. Kennedy-Ingalls Co.
W. P. & R. S. Mars Co.
Martindale Electric Co., Inc.
B. F. McDonald Co.

Steelcote Announces

TO SOLVE 23 SPECIAL PAINTING PROBLEMS

Only Damp-Tex among wet surface enamel brands offers a system of painting that meets 23 special conditions. Non-toxic surface without flavor tainting odor? New non-yellowing whiter white? Want 30-minute drying? Extreme hardness and resistance to mildew acids and alkali? Just specify your special problem. The Damp-Tex System may give you the tailor-made answer.

FOR SURVEY OF YOUR PLANT, MAIL COUPON BELOW

LIQUID, PORCELAIN-LIKE **DAMP-TEX** FOR **WET** OR DRY SURFACES

CLIP TO YOUR LETTERHEAD AND MAIL

Please send representative to survey our plant and recommend the most advanced solutions without obligation.

By _____

STEELCOTE MFG. CO.
Baltimore 1, Maryland

In Canada:
STEELCOTE MANUFACTURING CO. of CANADA, LTD.
Rodney, Ontario

When inquiring check FP 4265 opposite last page

EDMONT CASE NO. 582: World famous breakfast food manufacturer (name on request) job-tested No. 151 plastic impregnated gloves against leather faced gloves being used to handle kraft shipping containers. Result: Bought 113 dozen pairs within next 60 days after the test proved their greater comfort, safety and much longer wear.

Cost drops when gloves fit job

No. 151 Werx
Plastic impregnated.

No. 36 Monkey Grip
Plastic coated.

No. 930 Redmont. Neox (reinforced neoprene) coated.

Correct selection of the work gloves used by employees pays valuable dividends to management. After making the test of job-fitted gloves referred to in Case No. 582, above, the manufacturer reported: **"We found the No. 151 gloves were light and comfortable to wear, afforded excellent gripping action on the kraft containers, and wore considerably longer than the leather-faced gloves formerly used for which we paid approximately the same price. We have added this item to our inventory as a regular supply, and find that there are many other places in the plant where they can also be used to advantage."**

OVER 50 TYPES of Edmont job-fitted gloves are available to meet specific needs, palm coated or fully coated with Neox, various plastics or rubber, to resist cutting, abrasion, heat, cold, oils, acids, caustics, other chemicals.

EDMONT CASE NO. 317: In large meat packing plant, canvas gloves lasted 2 days handling hog shackles. Job-fitted gloves, coated with Edmont plastic, lasted 3 weeks.

MAKE THIS FREE JOB-TEST: Send description of your job operation, materials handled, temperature condition. Without cost, we will supply job-fitted gloves for testing.

Edmont Manufacturing Co., 1212 Walnut Street, Coshocton, Ohio
World's largest maker of coated industrial gloves, available through your industrial supplier.

Edmont

Edmont job-fitted gloves

When inquiring check FP 4266 opposite last page

Buyers Guide

New Jersey Safety Equipment Co.
Orr Safety Equipment Co.
Parker Safety Equipment Co.
Pennsylvania Optical Co.
Protective Equipment Co.
Pulmosan Safety Equipment Corp.
Rochester Safety Equipment Co.
Safety Equipment Distributing Co.
Safety Equipment Supply Co.
Safety First Supply Co.
Safety Specialists, Inc.
Scallan Supply Co.
Robert L. Schmitt Co.
Scientific Industrial Supply Co.
Seco Safety Products Co.
Sellstrom Mfg. Co.
Spokane Safety Appliance Co.
Standard Safety Equipment Co.
Chas. A. Strelinger Co.
Syracuse Supply Co., Industrial Supply Div.
U. S. Safety Service Co.
Universal Safety Equipment Co.
Universal Safety & Fire Equipment Co., Inc.
Wahlert Safety Products Corp.
Watchemoket Optical Co., Inc. (heavy duty)
Welsh Mfg. Co., Industrial Div.
Williams & Co., Inc.
Willson Products, Inc.
W. S. Wilson Corp.

FIRST AID CABINETS

Allied Safety Equipment Co.
Averill Equipment Co.
Brenton Equipment Co.
Continental Safety Equipment, Inc.
L. N. Curtis & Sons
Davis Emergency Equipment Co., Inc.
Delta Fire & Safety Equipment Co.
Dickson Safety Products Co.
The Elwood Corp.
Engineering Supply Co.
First Aid Service Co.
Fisher Scientific Co.
General Scientific Equipment Co.
Guardian Safety Equipment Co.
Industrial Products Co.
Karel First Aid Supply Co.
W. P. & R. S. Mars Co.
B. F. McDonald Co.
Medical Supply Co.
New Jersey Safety Equipment Co.
Rochester Safety Equipment Co.
Safety Equipment Supply Co.
Safety First Supply Co.
Safety Specialists, Inc.
Scallan Supply Co.
Robert L. Schmitt Co.
Spokane Safety Appliance Co.
Universal Safety Equipment Co.
Universal Safety & Fire Equipment Co., Inc.
Wahlert Safety Products Corp.
Williams & Co., Inc.
W. S. Wilson Corp.

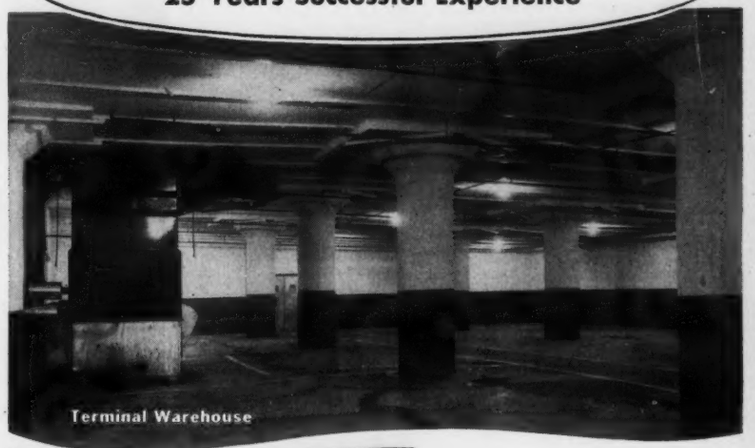
FIRST AID KITS

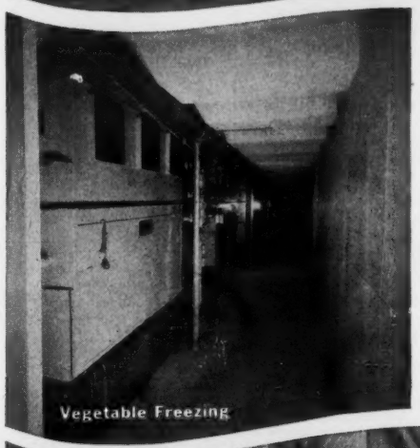
Allied Safety Equipment Co.
American Optical Co., Safety Products Div.
Averill Equipment Co.
Brenton Equipment Co.
Continental Safety Equipment, Inc.
L. N. Curtis & Sons
Davis Emergency Equipment Co., Inc.
Dayton Safety Supply Co.
Delta Fire & Safety Equipment Co.
Dickson Safety Products Co.
The Elwood Corp.
Engineering Supply Co.
First Aid Service Co.
Fisher Scientific Co.
General Scientific Equipment Co.
Guardian Safety Equipment Co.
A. E. Halperin Co., Inc.
J. E. Haseltine & Co.
Industrial Products Co.
Karel First Aid Supply Co.
W. P. & R. S. Mars Co.
B. F. McDonald Co.
Medical Supply Co.
New Jersey Safety Equipment Co.
Orr Safety Equipment Co.
The Pac-Kit Co.
Protective Equipment Co.

See page 47 for suppliers' addresses
(*Continued on next page*)

NIAGARA "NO FROST"

25 Years' Successful Experience


Terminal Warehouse


Vegetable Freezing

Always full capacity

★

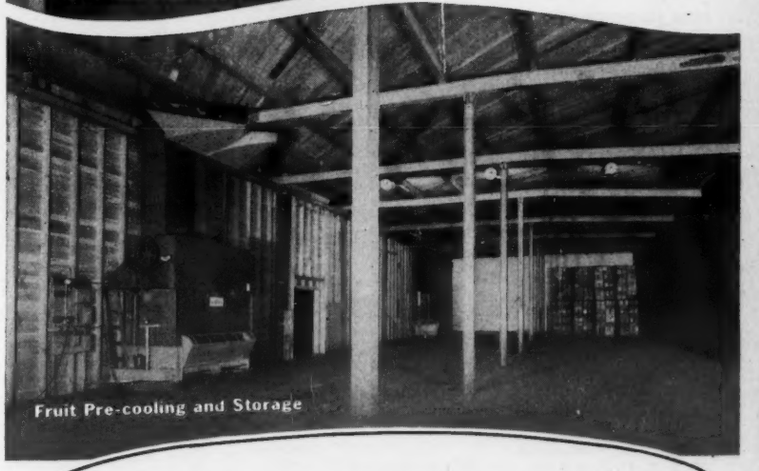
Never any defrosting shutdown

★

Always clean Freezing or Storage Rooms

★

Write for Niagara Bulletin 105


Fruit Pre-cooling and Storage

NIAGARA BLOWER COMPANY

Dept. F.P., 405 Lexington Ave., New York 17, N. Y.

District Engineers in Principal Cities of U. S. and Canada

When inquiring check FP 4267 opposite last page

Buyers Guide

(*Continued from preceding page*)

Rochester Safety Equipment Co.
Safety Equipment Distributing Co.
Safety Equipment Supply Co.
Safety First Supply Co.
Safety Specialists, Inc.
Scallan Supply Co.
Robert L. Schmitt Co.
Seco Safety Products Co.
Spokane Safety Appliance Co.
Universal Safety Equipment Co.
Universal Safety & Fire Equipment Co., Inc.
Wahlert Safety Products Corp.
Williams & Co., Inc.
W. S. Wilson Corp.

FIRST AID MATERIALS

Allied Safety Equipment Co.
Averill Equipment Co.
Bomgardner Mfg. Co.
Brenton Equipment Co.
Continental Safety Equipment, Inc.
L. N. Curtis & Sons
Davis Emergency Equipment Co., Inc.
Dayton Safety Supply Co.
Delta Fire & Safety Equipment Co.
Dickson Safety Products Co.
The Elwood Corp.
Engineering Supply Co.
First Aid Service Co.
Fisher Scientific Co.
General Scientific Equipment Co.
Guardian Safety Equipment Co.
A. E. Halperin Co., Inc.
J. E. Haseltine & Co.
Industrial Products Co.
Karel First Aid Supply Co.
W. P. & R. S. Mars Co.
B. F. McDonald Co.
Medical Supply Co.
The Pac-Kit Co.
Protective Equipment Co.
Rochester Safety Equipment Co.
Safety Equipment Distributing Co.
Safety Equipment Supply Co.
Safety First Supply Co.
Safety Specialists, Inc.
Scallan Supply Co.
Robert L. Schmitt Co.
Seco Safety Products Co.
Spokane Safety Appliance Co.
Universal Safety Equipment Co.
Universal Safety & Fire Equipment Co., Inc.
Wahlert Safety Products Corp.
Williams & Co., Inc.
W. S. Wilson Corp.

FIRST AID ROOM EQUIPMENT

Allied Safety Equipment Co.
Bomgardner Mfg. Co.
Brenton Equipment Co.
Delta Fire & Safety Equipment Co.
Dickson Safety Products Co.
The Dupps Co.
The Elwood Corp.
Engineering Supply Co.
First Aid Service Co.
General Scientific Equipment Co.
A. E. Halperin Co., Inc.
Industrial Products Co.
Karel First Aid Supply Co.
B. F. McDonald Co.
Rochester Safety Equipment Co.
Safety Equipment Supply Co.
Safety First Supply Co.
Safety Specialists, Inc.
Scott Aviation Corp. (oxygen inhalators)
Spokane Safety Appliance Co.
Wahlert Safety Products Corp.
Williams & Co., Inc.
W. S. Wilson Corp.

FOOT MATS, DISINFECTING

The Elwood Corp.
Industrial Products Co.
B. F. McDonald Co.
Rochester Safety Equipment Co.
Safety First Supply Co.
M. L. Snyder & Son, Inc.
Spokane Safety Appliance Co.
Universal Safety & Fire Equipment Co., Inc.
West Disinfecting Co.

GERMICIDES

Allied Safety Equipment Co.
Brulin & Co., Inc.

No other low-temperature insulation can match this unique combination of properties

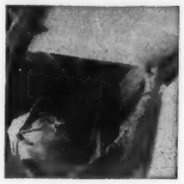
	LOW "K" FACTOR	SUPERIOR WATER RESISTANCE	EXCELLENT COMPRESSIVE STRENGTH	LIGHT WEIGHT	EASE OF HANDLING	SUPERIOR RESISTANCE TO VERMIN & DECAY	LOW INSTALLATION COST
STYROFOAM	✓ Permanently Low. Avg. 0.25	✓ Remains Dry and Assures Constant "K" Factor	✓ Highest Strength-Weight Ratio of Any Insulation	✓ Lightest of All Rigid Insulations. Avg. Density, 1.8 lbs. per cu. ft.	✓ Pleasant—Fabricates Easily with Common Tools. Doesn't Crumble	✓ Has No Food Value	✓ Lowest Cost, Too, Per Year of Service
INSULATION A		✓	✓			✓	
INSULATION B	✓			✓			
INSULATION C	✓		✓				

DOW

Styrofoam offers you all the properties you require in a low-temperature insulation

That's why so many leading companies depend on it

FAIRMONT CANNING COMPANY chooses Styrofoam



for its superior resistance to rot, mold, moisture. This Fairmont, Minnesota, company used nearly 1,000,000 board feet of Styrofoam® (a Dow plastic foam) on the floors, ceilings and walls of their new −10° F. freezer. They know its resistance to rot, mold, and moisture will assure long, efficient service.

LAWSON MILK COMPANY chooses Styrofoam

for its high structural strength. This Cuyahoga Falls, Ohio, dairy used Styrofoam in its new freezer and quick-chill room. Owners report, "Its fast, low-cost installation proved it best for milk and candy coolers and freezers, and its recent use as floor insulation under a 20-ton sharp-freeze unit".

MICKELBERRY SAUSAGE COMPANY chooses Styrofoam

for its light weight, ease of installation. This Bushnell, Illinois, meat company found the light weight and ease of handling and bonding of Styrofoam made installation surprisingly economical in its new freezer installation. You can be sure future building plans will include Styrofoam again.

GRAND UNION chooses Styrofoam

for its low "K" factor, lasting efficiency. This large supermarket chain re-insulated a 100-foot-long meat cooler with Styrofoam. There's no doubt that the low "K" factor of Styrofoam will stay low. This Dow plastic won't absorb water. It has proved time and time again to be unmatched in permanent insulating efficiency.

For further information on Styrofoam for use in low-temperature work, as a perimeter insulation or pipe covering, please write Dow Plastics Sales Department PL500D, THE DOW CHEMICAL COMPANY, Midland, Michigan, or contact your Styrofoam distributor: *The Putnam Organization, Inc., Chicago, Ill. • Seward Sales Corp., Elkhart, Ind. • Styro Products, Inc., Kansas City, Kansas • Atlantic Foam Products Co., Ipswich, Mass. • Par-Foam, Inc., Detroit, Mich. • Edwards Sales Corp., Minneapolis, Minn. • Floral Foam Products, Midland, Mich. • Styro Sales Co., New York City • William Summerhays Sons Corp., Rochester, N. Y. • G. & W. H. Corson, Inc., Plymouth Meeting, Penn. • The Emerson Co., Houston, Texas • Utah Lumber Co., Salt Lake City, Utah • S & S Sales Corp., Milwaukee, Wis. • Durofoam Insulation, Ltd., Kitchener, Ontario, Canada • Western Foam Products, Inc., Colma, Calif. • Wiley-Bayley & Company, Seattle, Wash.*

you can depend on DOW PLASTICS DOW

When inquiring check FP 4268 opposite last page

Buyers Guide

Engineering Supply Co.
Fisher Scientific Co.
Hillyard Chemical Co.
Huntington Laboratories, Inc.
Karel First Aid Supply Co.
Olin Mathieson Chemical Corp., Industrial Chemicals Div.
G. H. Packwood Mfg. Co.
Protective Equipment Co.
Rochester Safety Equipment Co.
Scientific Industrial Supply Co.
Sindar Corp.
Sterwin Chemicals, Inc.
Vestal, Inc.
West Disinfecting Co.
Willson Products, Inc.
W. S. Wilson Corp.
Wyandotte Chemicals Corp., J. B. Ford Div.

GLOVES & MITTENS

Advance Glove Mfg. Co.
Allied Safety Equipment Co.
American Optical Co., Safety Products Div.
American Rubberizing Co.
Averill Equipment Co.
Badger Safety Equipment Co.
W. M. Bashlin Co. (leather)
Brenton Equipment Co.
Continental Safety Equipment, Inc.
L. N. Curtis & Sons
David's Gloves, Inc.
Dayton Safety Supply Co.
Delta Fire & Safety Equipment Co.
Dickson Safety Products Co.
Edmont Mfg. Co.
Ellis Safety Products Co.
The Elwood Corp.
Engineering Supply Co.
Fisher Scientific Co.
Fulton Supply Co.
General Scientific Equipment Co.
B. F. Goodrich Co.
Graft-Pelle Co.
Granet Corp.
Guardian Safety Equipment Co.
Industrial Gloves Co.
Industrial Products Co.
Institute of Industrial Launderers
Jomac, Inc.
V. E. Kennedy-Ingalls Co.
W. P. & R. S. Mars Co.
B. F. McDonald Co.
Miller Products Co., Inc.
The M. F. Murdock Co.
Orr Safety Equipment Co.
Parker Safety Equipment Co.
Pioneer Rubber Co.
Plasco Safety Products Co.
Protective Equipment Co.
Pulmosan Safety Equipment Corp.
Racine Glove Co., Inc.
RefrigiWear Clothing Co.
Rochester Safety Equipment Co.
Safety Equipment Distributing Co.
Safety Equipment Supply Co.
Safety First Supply Co.
Safety Specialists, Inc.
Scallan Supply Co.
Robert L. Schmitt Co.
Scientific Industrial Supply Co.
Seco Safety Products Co.
Singer Glove Mfg. Co.
M. L. Snyder & Son, Inc.
Spokane Safety Appliance Co.
Surety Rubber Co.
Syracuse Supply Co., Industrial Supply Div.
Universal Safety & Fire Equipment Co., Inc.
Wahlert Safety Products Corp.
Weather-All Insulated Products
Wheeler Protective Apparel, Inc.
Williams & Co., Inc.
W. S. Wilson Corp.

GLOVES, RUBBER AND/OR SYNTHETIC

Advance Glove Mfg. Co.
Allied Safety Equipment Co.
American Allsafe Co., Inc.
American Optical Co., Safety Products Div.
American Rubberizing Co.
Averill Equipment Co.
Badger Safety Equipment Co.

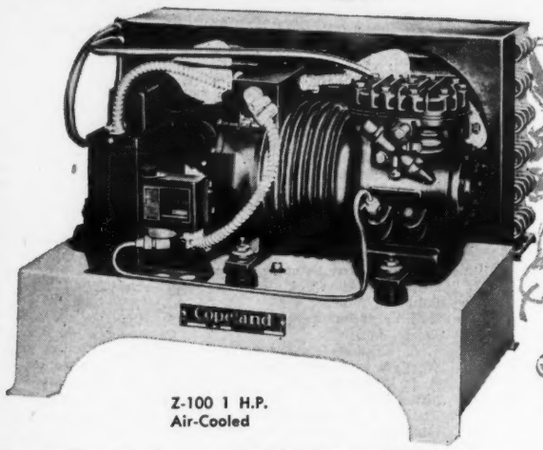
See page 47 for suppliers' addresses

(*Continued on next page*)

count on COPELAMETIC

THE *Accessible* HERMETIC

-for precooling
-freezing
-zero storage



Z-100 1 H.P.
Air-Cooled

Processors bank on Copelametic refrigerating units in every step of the freezing cycle. In today's quality-conscious market, fruits, vegetables, sea foods and meats must be quick-frozen at the very peak of flavor. *Rugged Copelametics deliver positive performance under heaviest seasonal loads . . .* let you meet product demand without expensive delays and loss of taste, nutrition or salability.

Copelametic's high BTU output maintains steady temperatures for rapid freezing, yet power consumption remains consistently low. Belts, seals and manual oiling are eliminated. "Accessible" Copelametics can be serviced on the spot.

It's a tradition in the refrigeration field to depend on Copeland equipment for the extra performance that means extra profits for the user. And Copelametics are the processor's best safeguard of perishable inventories. See your Copeland dealer or write direct.

Copeland
DEPENDABLE Electric REFRIGERATION
COPELAND REFRIGERATION CORPORATION SIDNEY, OHIO

When inquiring check FP 4269 opposite last page

Buyers Guide

(*Continued from preceding page*)

W. M. Bashlin Co. (rubber)
Brenton Equipment Co.
Central Safety Equipment Co.
Charleston Rubber Co.
Continental Rubber Works
Continental Safety Equipment, Inc.
David's Gloves, Inc.
Dayton Safety Supply Co.
Delta Fire & Safety Equipment Co.
Dickson Safety Products Co.
Edmont Mfg. Co.
Ellis Safety Products Co.
The Elwood Corp.
Engineering Supply Co.
Fisher Scientific Co.
Fulton Supply Co.
General Scientific Equipment Co.
Goodall Rubber Co.
B. F. Goodrich Co.
Graft-Pelle Co.
Granet Corp.
Guardian Safety Equipment Co.
Hood Rubber Co.
Industrial Products Co.
Institute of Industrial Launderers
Karel First Aid Supply Co.
V. E. Kennedy-Ingalls Co.
W. P. & R. S. Mars Co.
B. F. McDonald Co.
Milburn Co.
Miller Products Co., Inc.
The M. F. Murdock Co.
New Jersey Safety Equipment Co.
Orr Safety Equipment Co.
Parker Safety Equipment Co.
Pioneer Rubber Co.
Plasco Safety Products Co.
Protective Equipment Co.
Pulmosan Safety Equipment Corp.
Richmond Rubber Co.
Rochester Safety Equipment Co.
Safety Equipment Distributing Co.
Safety Equipment Supply Co.
Safety First Supply Co.
Safety Specialists, Inc.
Scallan Supply Co.
Robert L. Schmitt Co.
Scientific Industrial Supply Co.
Seco Safety Products Co.
Singer Glove Mfg. Co.
M. L. Snyder & Son, Inc.
Spokane Safety Appliance Co.
Standard Safety Equipment Co.
Chas. A. Strelinger Co.
Surety Rubber Co.
Syracuse Supply Co., Industrial Supply Div.
U. S. Rubber Co., Footwear and General Products Div.
Universal Safety Equipment Co.
Universal Safety & Fire Equipment Co.
Wahlert Safety Products Corp.
Weather-All Insulated Products
Williams & Co., Inc.
Wilson Rubber Co.
W. S. Wilson Corp.

GOGGLES

Allied Safety Equipment Co.
American Optical Co., Safety Products Div.
Averill Equipment Co.
Badger Safety Equipment Co.
Brenton Equipment Co.
Central Safety Equipment Co.
Chicago Eye Shield Co.
Continental Safety Equipment, Inc.
H. S. Cover Co.
L. N Curtis & Sons
Dayton Safety Supply Co.
Delta Fire & Safety Equipment Co.
Dickson Safety Products Co.
Dockson Corp.
Ellis Safety Products Co.
The Elwood Corp.
Engineering Supply Co.
Fendall Co.
Fisher Scientific Co.
Flexo Products, Inc.
L. A. Foster Co.
Fulton Supply Co.
General Scientific Equipment Co.
Graft-Pelle Co.
Guardian Safety Equipment Co.
J. E. Haseltine & Co.

A **DUPPS** LAVATORY

★ Meets the most rigid sanitary requirements ★ Is easy to install ★ Lasts a lifetime

Entirely self-contained, the DUPPS Lavatory is ready for use. Merely connect to your water and drainage lines. The aluminum pedestal is corrosion resistant and the stainless steel bowl will last a lifetime. Foot control valves aid sanitation and convenience of operation. It's easy to clean, keep clean.

WRITE US TODAY

THE **DUPPS** COMPANY
Germantown, Ohio

When inquiring check FP 4270 opposite last page

Stainless Steel!

GOULD SOLENOID VALVES

½" • ¾" • 1" TYPE K

Packless • Piston-Pilot Operated • Globe Bodies • Union Bonnet • Certified Alloy Castings • Screwed or Socket Weld Ends • Full Ports to 1000 psi.

Guaranteed Greenclad molded coils for temperatures to 250 deg. F. Whiteclad coils also guaranteed for higher temperature service.
Explosion Proof Coil Housings and special assemblies available to meet the most exacting applications. ⅛" and ¼" Type G stainless steel direct lift valves are also manufactured.

Ask for Bulletin K • STAINLESS STEEL and Bulletin 500-B • BRONZE

J. D. GOULD *Company*
734 EAST WASHINGTON STREET • INDIANAPOLIS 2, INDIANA

When inquiring check FP 4271 opposite last page

WHAT HAPPENS IF YOU DON'T CONTROL GREASE?

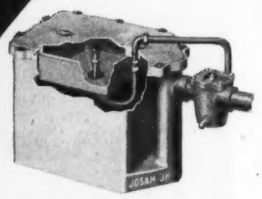
• **Failure to intercept greasy wastes before they reach drains and pipe lines results in all kinds of *trouble*:—**

1. **Lines become clogged . . .**
2. **Local authorities issue citation for violation of code . . .**
3. **Expensive repair results . . .**
4. **Production is delayed . . .**
5. **Odors become noticeable . . .**

why take chances..?

Josam series JH GREASE INTERCEPTOR

DRAWS OFF GREASE *AUTOMATICALLY* at the turn of a valve



The JOSAM "JH" Grease Interceptor intercepts over 95% of the grease in waste water and draws off intercepted grease to a convenient storage container AT THE TURN OF A VALVE. You never need to remove cover. Grease flows out of draw-off nozzle — no clogged waste lines, no odor, no mess, no inconvenience! Find out how thousands of food processing and packing plants throughout the country are eliminating trouble while turning waste grease into profits — send coupon below today!

JOSAM MANUFACTURING COMPANY
Dept. FP, Michigan City, Indiana

Please send free copy of Manual on Interception of Wastes.

Name .....
Firm .....
Address .....
City .....Zone .....State .....

When inquiring check FP 4272 opposite last page

Buyers Guide

Jackson Products, Inc.
Jones & Co.
V. E. Kennedy-Ingalls Co.
W. P. & R. S. Mars Co.
Martindale Electric Co., Inc.
B. F. McDonald Co.
New Jersey Safety Equipment Co.
Orr Safety Equipment Co.
Parker Safety Equipment Co.
Pennsylvania Optical Co.
Plasco Safety Products Co.
Protective Equipment Co.
Pulmosan Safety Equipment Corp.
Rochester Safety Equipment Co.
Safety Equipment Distributing Co.
Safety Equipment Supply Co.
Safety First Supply Co.
Safety Specialists, Inc.
Scallan Supply Co.
Robert L. Schmitt Co.
Scientific Industrial Supply Co.
Seco Safety Products Co.
Sellstrom Mfg. Co.
Spokane Safety Appliance Co.
Standard Safety Equipment Co.
Chas. A. Strelinger Co.
Syracuse Supply Co., Industrial Supply Div.
U. S. Safety Service Co.
Universal Safety Equipment Co.
Universal Safety & Fire Equipment Co.
Wahlert Safety Products Corp.
Watchemoket Optical Co., Inc.
Welsh Mfg. Co., Industrial Div.
Williams & Co., Inc.
Willson Products, Inc.
W. S. Wilson Corp.

GOGGLE CLEANING DISPENSERS

Allen Optical Co.
Allied Safety Equipment Co.
American Allsafe Co., Inc.
American Optical Co., Safety Prod. Div.
Averill Equipment Co.
Badger Safety Equipment Co.
Brenton Equipment Co.
The Buckley Corp.
Carhoff Co.
Continental Safety Equipment, Inc.
L. N. Curtis & Sons
Dayton Safety Supply Co.
Delta Fire & Safety Equipment Co.
Dickson Safety Products Co.
The Elwood Corp.
Engineering Supply Co.
General Scientific Equipment Co.
Guardian Safety Equipment Co.
J. E. Haseltine & Co.
Hygiene Research, Inc.
Industrial Products Co.
Karel First Aid Supply Co.
V. E. Kennedy-Ingalls Co.
W. P. & R. S. Mars Co.
B. F. McDonald Co.
New Jersey Safety Equipment Co.
Orr Safety Equipment Co.
Pennsylvania Optical Co.
Protective Equipment Co.
Pulmosan Safety Equipment Corp.
Rochester Safety Equipment Co.
Safety Equipment Supply Co.
Safety First Supply Co.
Safety Specialists, Inc.
Scallan Supply Co.
Robert L. Schmitt Co.
Scientific Industrial Supply Co.
Seco Safety Products Co.
Spokane Safety Appliance Co.
U. S. Safety Service Co.
Universal Safety Equipment Co.
Universal Safety & Fire Equipment Co.
Wahlert Safety Products Corp.
Wilkins Co., Inc.
Williams & Co., Inc.
W. S. Wilson Corp.

GOGGLE CLEANERS, TISSUES

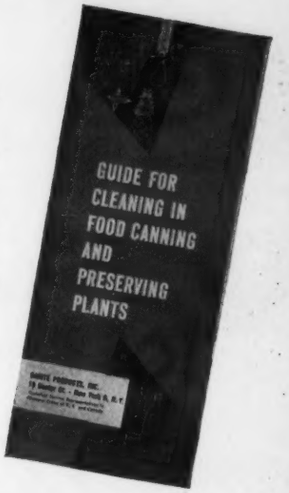
Allen Optical Co.
Allied Safety Equipment Co.
American Allsafe Co., Inc.
American Optical Co., Safety Prod. Div.
Averill Equipment Co.

See page 47 for suppliers' addresses

(*Continued on next page*)

for a "NEW LOOK" at Cleaning Economy

Send for your FREE copy of this handy guide



If you're searching for better, more effective ways to slash rising maintenance costs, add this newest Oakite Guide on plant sanitation to your list of required reading.

Designed expressly for the economy-minded food plant executive, it's chock-full of concrete, *useable* information on every phase of cleaning.

Included is a tabulated list of the equipment you use in your plant, together with detailed information on the best methods for cleaning each item—the equipment you'll need . . . the detergent to use . . . the most effective concentration. In addition, a special section is devoted to the newest approach toward economy maintenance—"Mechanized" Cleaning.

And then there's a point-by-point check list to assist you in overhauling your entire cleaning operation for better results with a minimum of time and effort. Nothing has been left out of this cleaning manual that would help you to simplify and to save on plant-wide sanitation. This guide is yours FREE, with no obligation. Ask your local Oakite Technical Service Representative for a copy, or write Oakite Products, Inc., 27A Rector St., N. Y. 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
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MATERIALS • METHODS • SERVICE

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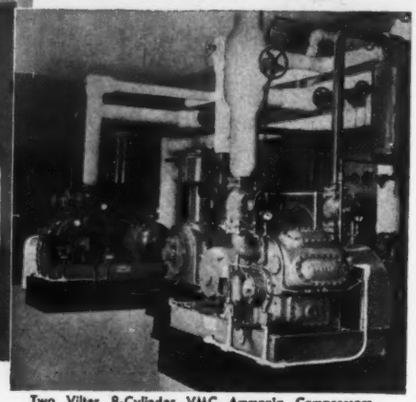
Vilter Ice Builder in the Golden Guernsey Ice Cream Plant Milwaukee, Wisconsin



Two Vilter 8-Cylinder VMC Ammonia Compressors which provide refrigeration for the Sanitary Farms Dairy, Cedar Rapids, Iowa

Q. What do these two outstanding dairies have in common?

A. Vilter **REFRIGERATION** that **costs less to own***

Experienced users of Vilter equipment attest to its proven performance, economical operation, and rugged sturdiness requiring a minimum of maintenance—a real cost saver over the long haul . . . an excellent investment. It's no wonder so many dairies have Vilter in common.

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For handy information, write for your free copy of Vilter's bulletins describing refrigeration equipment for the dairy industry, meat packing, food, brewery, frozen concentrates, fishing, and other industries, or call in a Vilter field engineer for counsel.

* Savings in low first cost are not the complete answer when considering the installation of refrigeration equipment. But savings in terms of years of extra service, reliable performance and minimum maintenance—that's where Vilter excels in low-cost ownership.

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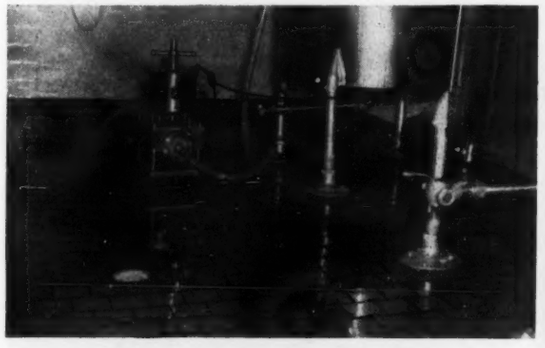

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For more information on product at right, specify FP 4277 . . . see information request blank opposite last page.

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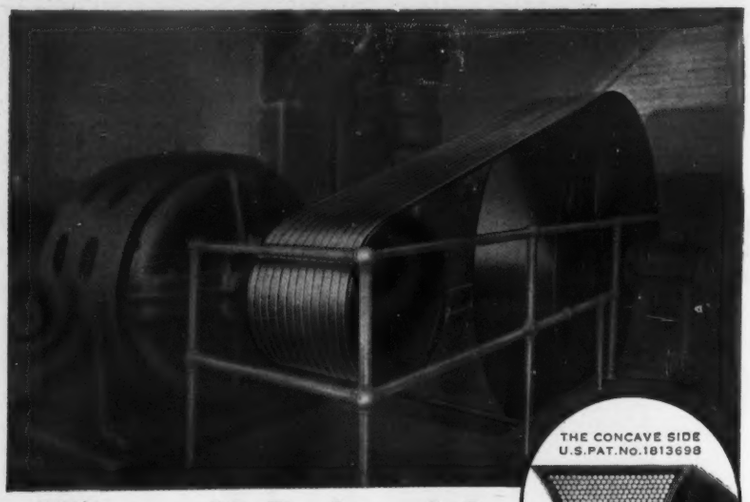

Why a V-Belt with CONCAVE SIDES wears longer

It is easy to demonstrate to yourself why the concave sides (Fig. 1) of the Gates belt greatly lengthen belt life.

Fig. 1

Simply bend a Gates belt and feel the sides. Notice how these precisely engineered concave sides *fill out* on the bend and *become straight.* Thus a Gates belt grips the sheave groove evenly (Fig. 1-A) and wear is distributed uniformly across each side of the belt. That means longer belt life; lower costs.

Fig. 1-A

Make the same test with a straight-sided belt (Fig. 2) and see what happens. The sides bulge out on the bend (Fig. 2-A) concentrating the wear at points shown by arrows.

To assure longer wear and keep belt costs down, specify the V-belt with concave sides—Gates Vulco Rope . . . readily available from nearby distributor stocks. The Gates Rubber Company, Denver, Colorado —*World's Largest Maker of V-Belts.*

Fig 2

There are Gates Engineering Offices and Distributor Stocks in all industrial centers of the United States and Canada, and in 70 other countries throughout the world.

TPA 88

Fig 2-A

Gates VULCO ROPE Drives

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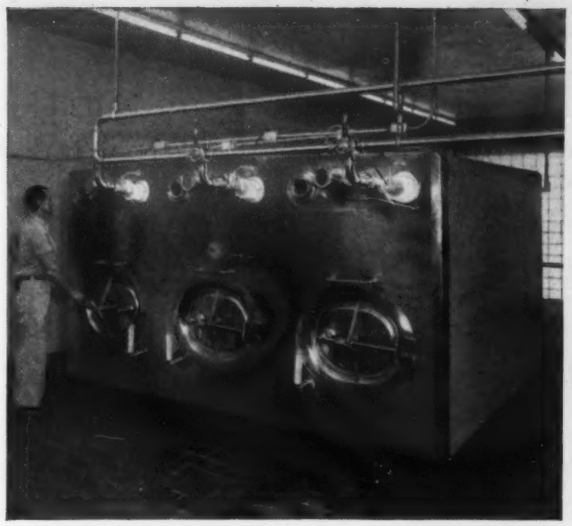

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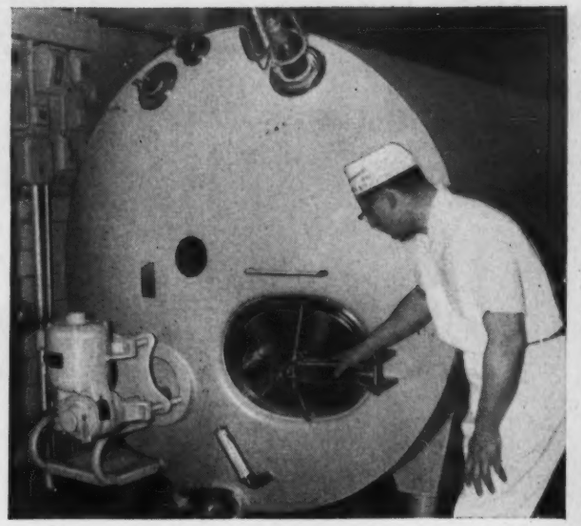

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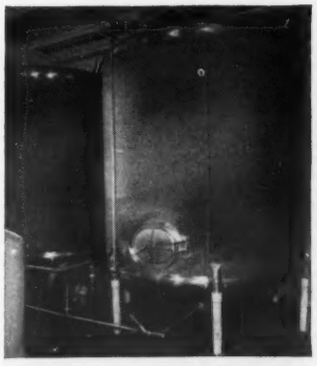

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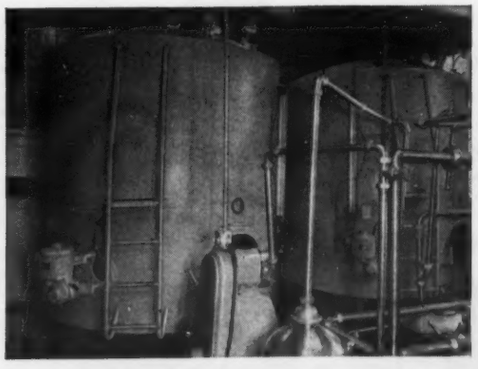

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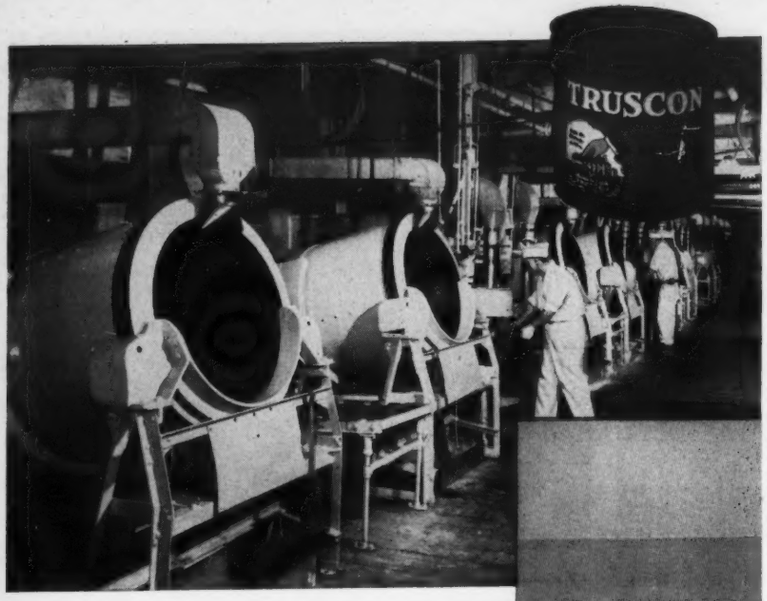

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Firm_____
Address_____
City_____ Zone____ State_____

When inquiring check FP 4280 opposite last page

Buyers Guide

(*Continued from preceding page*)

Hillyard Chemical Co.
Huntington Laboratories, Inc.
Karel First Aid Supply Co.
Linen Supply Assn. of America
Rochester Safety Equipment Co.
Scientific Industrial Supply Co.
Scott Paper Co.
Towlsaver, Inc.
West Disinfecting Co.

TOWELS, PAPER
Cherry-Burrell Corp.
Huntington Laboratories, Inc.
Linen Supply Assn. of America
Scientific Industrial Supply Co.
Scott Paper Co.
Towlsaver, Inc.
West Disinfecting Co.

TOWELS, ROLLER
Huntington Laboratories, Inc.
Institute of Industrial Launderers
Linen Supply Assn. of America
Scientific Industrial Supply Co.
Towlsaver, Inc. (paper)
West Disinfecting Co. (paper)

UNIFORMS, INDUSTRIAL
Angelica Uniform Co.
Industrial Gloves Co.
Institute of Industrial Launderers
Linen Supply Assn. of America
Rochester Safety Equipment Co.
Safety Specialists, Inc.
Scientific Industrial Supply Co.
Spokane Safety Appliance Co.

VENDING MACHINES, SANITARY NAPKINS
A. E. Halperin Co., Inc.
Karel First Aid Supply Co.
Linen Supply Assn. of America
Rochester Safety Equipment Co.
Scientific Industrial Supply Co.
Spokane Safety Appliance Co.
West Disinfecting Co.

WASHFOUNTAINS
The Dupps Co.
Kohler Co.
Rochester Safety Equipment Co.
Speakman Co.
Sunroc Corp.

WASHROOM EQUIPMENT, INDUSTRIAL
Philip Carey Mfg. Co.
The Dupps Co.
Karel First Aid Supply Co.
Kohler Co.
Rochester Safety Equipment Co.
Scientific Industrial Supply Co.
West Disinfecting Co.

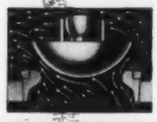
WASTE RECEPTACLES
Allied Safety Equipment Co.
Averill Equipment Co.
Bennett Mfg. Co.
General Scientific Equipment Co.
Graft-Pelle Co.
Huntington Laboratories, Inc.
Industrial Products Co.
Karel First Aid Supply Co.
Rochester Safety Equipment Co.
Safety Equipment Distributing Co. (safety
Scallan Supply Co.
Robert L. Schmitt Co.
Scientific Industrial Supply Co.
Scott Paper Co.
Seco Safety Products Co.
Spokane Safety Appliance Co.
West Disinfecting Co.

WATER COOLERS
Acme Industries, Inc.
General Motors Corp., Frigidaire Div.
Graft-Pelle Co.
Haws Drinking Faucet Co.
Rochester Safety Equipment Co.
Sunroc Corp.
Halsey W. Taylor Co.

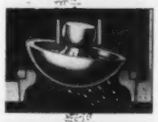
Complete names and addresses of suppliers in this Buyers Guide are listed on the following pages

for greater pump efficiency USE *Royal Crown* PUMP VALVES

"the valve with a 1000 seats"



Round valve surface is streamlined. No obstructions to restrict the flow



Ball-guided valve rotates and swings with each stroke of the pump. Each turn, each swing — a lapping action, a continuing perfect seat

Free vertical action assures instant opening and closing. Ball stem is a frictionless guide.

Here's a revolutionary idea in pump valves that results in *much longer, trouble-free valve life and greater pump capacity.*

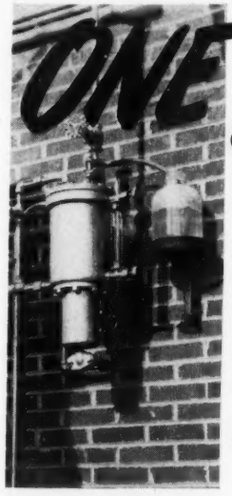
Royal Crown Pump Valves are guided by a frictionless ball stem (not a rigid guide) which allows them to oscillate and turn with the fluid stream. They swing freely with each stroke of the pump — seating perfectly each time in a new position. There is a minimum of resistance to the fluid which results in greater pump volume at less pump speed.

OUTSTANDING FEATURES
- No springs required to force the valve to seat.
- No crossbars in seat to restrict the flow.
- Valve cannot bind in any position — will not flutter.
- Releases and seals the flow instantly.
- Adaptable to all reciprocating pumps.

BLH MADSEN WORKS
CONSTRUCTION EQUIPMENT DIVISION
Baldwin-Lima-Hamilton Corporation
14120 EAST ROSECRANS AVENUE • P.O. BOX 38 • LA MIRADA, CALIF., U.S.A.

Write for FREE literature

When inquiring check FP 4281 opposite last page



ARMSTRONG REFRIGERANT PURGER CAN DO ALL THIS

- Save Refrigerant
- Cut Power Consumption
- Cut Cooling Water Consumption
- Increase Compressor Capacity
- Save Labor
- Help Prevent "Ammonia" Explosions
- End Disagreeable, Smelly, Bothersome Hand Purging

BULLETIN No. 2211, free on request, tells how Armstrong Purgers accomplish this impressive list of benefits. These are no idle claims. They are based on experiences of users.

It costs nothing to learn about Armstrong Purgers.

Send for Bulletin No. 2211 today.

ARMSTRONG STEAM TRAPS
ARMSTRONG MACHINE WORKS
881 Maple Street, Three Rivers, Michigan

When inquiring check FP 4282 opposite last page

ADDRESSES

Complete addresses of suppliers listed in Buyers Guide

sanitation and maintenance

Acme Industries, Inc.
Dept. CWG, 600 N. Mechanic St., Jackson, Mich.

Acme Protection Equipment Co.
1209 Kalamazoo St., South Haven, Mich.

Advance Glove Mfg. Co.
903 W. Lafayette Blvd., Detroit 26, Mich.

Allen Optical Co.
85 Allen St., Buffalo 2, N. Y.

Allied Safety Equipment Co.
1 Main St., Houston, Tex.

American Allsafe Co., Inc.
1240 Niagara St., Buffalo 13, N. Y.

American Dispenser Co., Inc.
115 E. 23rd St., New York 10, N. Y.

American Mat Corp.
1730 Adams St., Toledo 2, Ohio

American Optical Co., Safety Products Div.
2 Mechanic St., Southbridge, Mass.

American Rubberizing Co.
617-11th Ave. S., Minneapolis, Minn.

Angelica Uniform Co.
1427 Olive St., St. Louis 3, Mo.

Armour & Co., Industrial Soap Dept.
1355 W. 31st St., Chicago 9, Ill.

Averill Equipment Co.
19225 Conant Ave., Detroit 34, Mich.

Ayerst Laboratories
22 E. 40th St., New York 16, N. Y.

Badger Safety Equipment Co.
647 W. Virginia, Milwaukee, Wis.

W. M. Bashlin Co.
Bashlin Bldg., 119 N. Pine St., Grove City 3, Pa.

Beacon Falls Rubber Footwear
3940 W. 42nd St., Chicago, Ill.

Bennett Mfg. Co.
41 Mechanic, Alden, N. Y.

Benson & Associates
P. O. Box 7542, Chicago 80, Ill.

Bomgardner Mfg. Co.
1384 Hird Ave., Cleveland 7, Ohio

The Boyer-Campbell Co.
6666 Antoine St., Detroit, Mich.

John H. Breck, Inc.
115 Dwight St., Springfield 3, Mass.

Bronton Equipment Co.
489 Bryant St., San Francisco, Calif.

Bristol-Myers Products Div.
630 Fifth Ave., New York 20, N. Y.

Brooks Chemical, Inc.
3304 E. 87th St., Cleveland 27, Ohio

Brulin & Co., Inc.
2939 Columbia Ave., Indianapolis, Ind.

The Buckley Corp.
607 Fifth Ave., New York 17, N. Y.

R. H. Buhrke Co.
1403 W. Congress St., Chicago 7, Ill.

Philip Carey Mfg. Co.
Wayne Ave. at Cooper, Cincinnati 15, Ohio

Carhoff Co.
11706 Kinsman Ave., Cleveland 20, Ohio

Central Safety Equipment Co.
6601 Marsden St., Philadelphia 35, Pa.

Charleston Rubber Co.
158 Stark Industrial Park, Charleston, S. C.

Chem-Wear, Inc.
Post Rd., P. O. Box 1044, Darien, Conn.

Cherry-Burrell Corp.
427 W. Randolph St., Chicago 6, Ill.

Chicago Eye Shield Co.
2300 Warren Blvd., Chicago 12, Ill.

Chic Maid Hat Mfg. Co., Inc.
630 High St., Buffalo 11, N. Y.

Continental Can Co.
100 E. 42nd St., New York 17, N. Y.

Continental Rubber Works
1936 Liberty St., Erie 6, Pa.

Continental Safety Equipment, Inc.
1551 Selby Ave., St. Paul 4, Minn.

H. S. Cover Co.
92 Chippewa St., South Bend, Ind.

L. N. Curtis & Sons
1204 Westlake, North, Seattle, Wash.

David's Gloves, Inc.
23 W. Pleasant St., Springfield 99, Ohio

Davis Emergency Equipment Co., Inc.
45 Halleck St., Newark 4, N. J.

Dayton Safety Supply Co.
316 Longworth St., Dayton, Ohio

Delta Fire & Safety Equipment Co.
531 Poydras St., New Orleans, La.

Dickson Safety Products Co.
2952 Crenshaw Blvd., Los Angeles, Calif.

Dockson Corp.
3839 Wabash Ave., Detroit 8, Mich.

Dow Corning Corp.
592 Saginaw Rd., Midland, Mich.

The Dupps Co.
Germantown, Ohio

Edmont Mfg. Co.
1212 Walnut St., Coshocton, Ohio

Ellis Safety Products Co.
3450 Michigan, East Chicago, Ind.

The Elwood Corp.
2180 Elmwood Ave. at Hinman, Buffalo 23, N. Y.

Engineering Supply Co.
2656 Main St., Dallas, Tex.

Fendall Co.
4511 N. Lincoln Ave., Chicago 25, Ill.

Fibre-Metal Products Co.
567 Tilghman, Chester, Pa.

First Aid Service Co.
285 2nd St., San Francisco, Calif.

Fisher Scientific Co.
717 Forbes St., Pittsburgh 19, Pa.

Flexo Products, Inc.
1468 W. 9th St., Cleveland 13, Ohio

L. A. Foster Co.
4556 Manchester, St. Louis, Mo.

Fulton Supply Co.
342 Nelson St. S. W., Atlanta, Ga.

General Motors Corp., Frigidaire Div.
300 Taylor St., Dayton 1, Ohio

General Scientific Equipment Co.
2700 Huntingdon St., Philadelphia 32, Pa.

Goodall Rubber Co.
417 Whitehead Rd., Trenton 4, N. J.

B. F. Goodrich Co.
500 S. Main St., Akron, Ohio

Graft-Pelle Co.
309 W. Main St., Louisville, Ky.

Granet Corp.
21 Loring Drive, Framingham, Mass.

Guardian Safety Equipment Co.
216 S. 45th St., Philadelphia 4, Pa.

A. E. Halperin Co., Inc.
75 Northampton St., Boston 18, Mass.

J. E. Haseltine & Co.
115 S. W. 2nd St., Portland, Ore.

Haws Drinking Faucet Co.
Fourth and Page Sts., Berkeley 10, Calif.

Hillyard Chemical Co.
290 Robidoux St., St. Joseph, Mo.

Hood Rubber Co.
99 Nichols Ave., Watertown, Mass.

Huntington Laboratories, Inc.
1937 Breen St., Huntington, Ind.

Hygiene Research, Inc.
684 Broadway, New York 12, N. Y.

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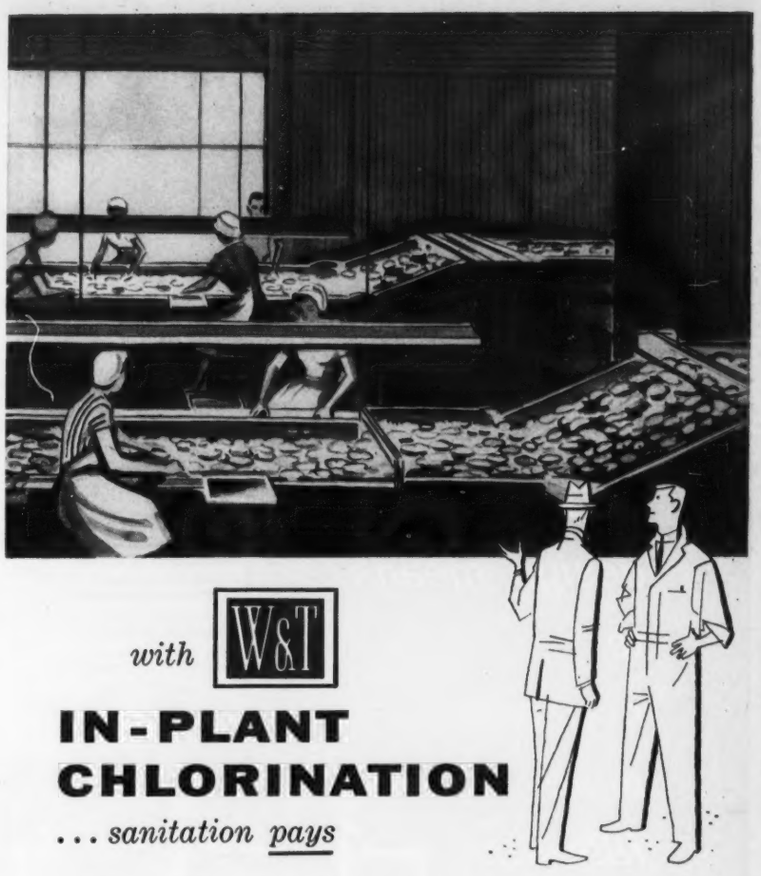


with W&T

IN-PLANT CHLORINATION

. . . sanitation pays

1 *By cutting average time spent on plant cleanups by more than 33%*

2 *By greatly reducing product spoilage caused by bacteria*

3 *By virtually eliminating all off-odors and slime on equipment and floors*

The list of benefits could go on and on. Many food processors are constantly discovering new benefits particularly related to their own processing operations. Essentially they all tell the same story:

"In-Plant Chlorination means lower operating costs and higher production efficiency."

Important, too, is getting the best "know-how" and equipment on the job. Wallace & Tiernan's nationwide field organization offers expert technical assistance, and W&T dependable chlorination equipment offers "expert" performance. For information on how In-Plant Chlorination by W&T can make *your* sanitation pay, write our Foods Division.

WALLACE & TIERNAN INCORPORATED
25 MAIN STREET, BELLEVILLE 9, NEW JERSEY

I-91

When inquiring check FP 4283 opposite last page

Crucible stainless steel, type 304, is used throughout this Sparkler standard horizontal plate filter.

Constant filtration of chemicals, pharmaceuticals, foods and liquids subject this horizontal plate filter to pretty rugged corrosive, abrasive and temperature conditions. That's why Sparkler Manufacturing Co. uses all-stainless steel construction.

For stainless, first of all, fights off corrosive attack. And it's strong. Stainless becomes tougher the more it's used . . . which is another way of saying that, with stainless, abrasion is no problem. And neither is cleaning. For stainless steels' smooth, bright surface comes clean with a minimum of effort . . . stays clean longer.

The fact is, stainless makes any equipment stronger, longer-lasting, easier to use. Check with your local Crucible representative for help in selecting the best stainless grade for your job. Or write *Crucible Steel Company of America, The Oliver Bldg., Mellon Sq., Pittsburgh 22, Pa.*

CRUCIBLE first name in special purpose steels

Crucible Steel Company of America

When inquiring check FP 4284 opposite last page

Buyers Guide

(*Continued from preceding page*)

Industrial Gloves Co.
700 Garfield St., Danville, Ill.

Industrial Products Co.
2850 N. Fourth St., Philadelphia 33, Pa.

Institute of Industrial Launderers
1346 Connecticut Ave. N. W., Washington 6, D. C.

Jackson Products, Inc.
31739 Mound Rd., Warren, Mich.

Jomac, Inc.
6128 N. Woodstock St., Philadelphia 38, Pa.

Jones & Co.
125 Catlin Ave., Rumford 16, R. I.

Karel First Aid Supply Co.
4342 W. Ogden Ave., Chicago 23, Ill.

V. E. Kennedy-Ingalls Co.
3735 N. 35th St., Milwaukee 16, Wis.

Kimberly-Clark Corp.
4500 N. Commercial St., Neenah, Wis.

Kohler Co.
44 High St., Kohler, Wis.

Lehigh Safety Shoe Co., Inc.
Thomas St., Emmaus, Pa.

Lily-Tulip Cup Corp.
122 E. 42nd St., New York 17, N. Y.

Linen Supply Assn. of America
22 W. Monroe St., Chicago 3, Ill.

Logan Emergency Showers, Inc.
Glendale, Calif.

Lynn Chemical Products
18 Suffolk St., Lynn, Mass.

W. P. & R. S. Mars Co.
324 W. Michigan Ave., Duluth, Minn.

Martindale Electric Co., Inc.
1365 Hird St., Cleveland 7, Ohio

B. F. McDonald Co.
5721 W. 96th St., Los Angeles 45, Calif.

Medical Supply Co.
1027 W. State St., Rockford, Ill.

Milburn Co.
3246 E. Woodbridge, Detroit 7, Mich.

Miller Products Co., Inc.
31 Warren St., New York 7, N. Y.

The M. F. Murdock Co.
310 Water St., Akron 8, Ohio

National Safety Council
425 N. Michigan Ave., Chicago 11, Ill.

New Jersey Safety Equipment Co.
299 Park Ave., East Orange, N. J.

Olin Mathieson Chemical Corp., Industrial Chemicals Div.
Mathieson Bldg., Baltimore 3, Md.

Onox, Inc.
125 Second St., San Francisco 5, Calif.

Orr Safety Equipment Co.
300 E. Main St., Louisville, Ky.

The Pac-Kit Co.
185 Greenwich Ave., Greenwich, Conn.

G. H. Packwood Mfg. Co.
1534 Tower Grove Ave., St. Louis 10, Mo.

Parker Safety Equipment Co.
785 Lyons Ave., Irvington, N. J.

Pennsylvania Optical Co.
234 S. Eighth St., Reading, Pa.

Petra Mfg. Co.
1335 N. Wells, Chicago 10, Ill.

Pioneer Rubber Co.
237 Tiffin Rd., Willard, Ohio

Plasco Safety Products Co.
21 W. Pleasant, Springfield, Ohio

Protective Equipment Co.
634 Orleans St., Chicago, Ill.

Pulmosan Safety Equipment Corp.
644 Pacific St., Brooklyn 17, N. Y.

Racine Glove Co., Inc.
Rio, Wis.

Reece Wooden Sole Shoe Co.
13th & 41st Ave., Columbus, Neb.

RefrigiWear Clothing Co.
201 E. 34th St., New York 16, N. Y.

Richmond Rubber Co.
618 E. Leigh St., Richmond, Va.

Rochester Safety Equipment Co.
83 Howell St., Rochester, N. Y.

Safepron Sales Co.
657 E. State St., Salem, Ohio

Safety Equipment Distributing Co.
832 W. Main Ave., Knoxville, Tenn.

Safety Equipment Supply Co.
7747 W. Ardmore St., Chicago 31, Ill.

Buyers Guide

Safety First Supply Co.
425 Magee St., Pittsburgh 19, Pa.

Safety Specialists, Inc.
P. O. Box 446, Newark 1, N. J.

Sani-Mist Inc.
1724 Chestnut St., Philadelphia 3, Pa.

The H. M. Sawyer & Son Co.
20 Thorndike St., Cambridge 41, Mass.

Scallan Supply Co.
2337 Gilbert Ave., Cincinnati, Ohio

Robert L. Schmitt Co.
732 E. Market St., Louisville, Ky.

Scientific Industrial Supply Co.
2958 S. Vernon Ave., Chicago 16, Ill.

Scott Aviation Corp.
207 Erie St., Lancaster, N. Y.

Scott Paper Co.
Market at Markus Sts., Chester, Pa.

Seco Safety Products Co.
1437 Brooklyn Ave., Detroit, Mich.

Sellstrom Mfg. Co.
255 Hicks Rd., Palatine, Ill.

Sindar Corp.
330 W. 42nd St., New York 36, N. Y.

Singer Glove Mfg. Co.
860 W. Weed St., Chicago 22, Ill.

M. L. Snyder & Son, Inc.
1810-70 E. Boston Ave., Philadelphia 25, Pa.

Speakman Co.
30th & Spruce Sts., Wilmington 99, Del.

Spokane Safety Appliance Co.
N. 219 Division, Spokane 2, Wash.

Standard Safety Equipment Co.
232 W. Ontario St., Chicago 10, Ill.

Sterwin Chemicals, Inc.
1450 Broadway, New York 18, N. Y.

Chas. A. Strelinger Co.
149 E. Larned St., Detroit 26, Mich.

Sugar Beet Products Co., Chemical By-Products Div.
302 Waller St., Saginaw, Mich.

Sunroc Co.
Man O'War Rd., Glen Riddle 4, Pa.

Surety Rubber Co.
N. High St., Carrolton, Ohio

Syracuse Supply Co., Industrial Supply Div.
314 W. Fayette St., Syracuse, N. Y.

Halsey W. Taylor Co.
1259 N. Park Ave., Warren, Ohio

Thermo-Mat Co.
814 S. Robertson Blvd., Los Angeles 35, Calif.

Towlsaver, Inc.
2816 E. 11th St., Los Angeles 23, Calif.

U. S. Rubber Co., Footwear & General Products Div.
Rockefeller Center, 1230 Ave. of the Americas, New York 20, N. Y.

U. S. Safety Service Co.
1217 McGee St., Kansas City 6, Mo.

Universal Safety & Fire Equipment Co., Inc.
5115 W. Diversey, Chicago, Ill.

Universal Safety Equipment Co.
Box 1587, Salt Lake City, Utah

Vestal, Inc.
4963 Manchester Ave., St. Louis, Mo.

Wahlert Safety Products Corp.
1 De Kalb Ave., Brooklyn, N. Y.

Watchemoket Optical Co., Inc.
234 W. Exchange St., Providence 3, R. I.

Weather-All Insulated Products, Div. of Arctic Feather & Down Co.
225 Belleville Ave., Bloomfield, N. J.

Welsh Mfg. Co., Industrial Div.
9 Magnolia St., Providence 9, R. I.

West Disinfecting Co.
42-16 West St., Long Island City 1, N. Y.

Wheeler Protective Apparel, Inc.
224 W. Huron St., Chicago 10, Ill.

Wilkins Co., Inc.
220 Groton Ave., Cortland 1, N. Y.

Williams & Co., Inc.
903 Pennsylvania Ave., Pittsburgh 33, Pa.

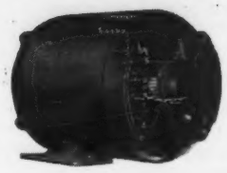
Willson Products, Inc.
205 Washington St., Reading, Pa.

W. S. Wilson Corp.
47-50 38th St., Long Island City 1, N. Y.

Wilson Rubber Co.
1200 Garfield Ave. S. W., Canton 6, Ohio

Worklon, Inc.
253 W. 28th St., New York 1, N. Y.

Wyandotte Chemicals Corp., J. B. Ford Div.
Alkali Square, Wyandotte, Mich.

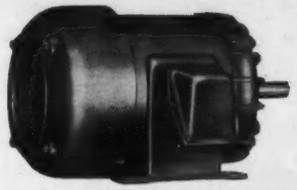


DRIP PROOF—1/20 to 3/4 H.P.
A.C., Single or Polyphase
Send for Bulletin 1-5P1

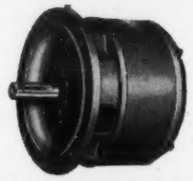
for full operating efficiency
choose a Century MOTOR
***Performance-Rated* to Bring Out All the Top Performance That's Engineered Into Your Equipment**

RIGID BASE, OPEN TYPE, PROTECTED
1 to 400 H.P.—A.C., Single or Polyphase
May be used in place of splash proof... screens available for rodent protection.
Send for Bulletin 6-1P1

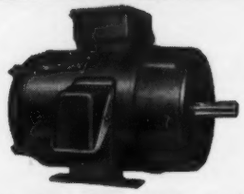
CUSHION BASE, OPEN TYPE, PROTECTED—1/20 to 5 H.P.
A.C., Single or Polyphase
Send for Bulletin 6-1P1



TOTALLY ENCLOSED FAN COOLED
1 to 100 H.P., A.C., Single or Polyphase
Send for Bulletin 6-1P1

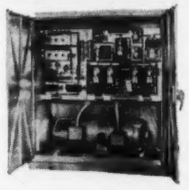


FLANGE BRACKET (NEMA "D")
Round, short frame—for horizontal or vertical operation
Send for Bulletin 6-1P1



FACE TYPE BRACKET (NEMA "C")
With feet for motor-mounted equipment
Send for Bulletin 6-1P1

EXPLOSION PROOF MOTORS
2 to 100 H.P.
UL approval Class I, "C" and "D"
Class II, "E," "F" and "G"
Send for Bulletin 6-1P45



SELECTIVE SPEED DRIVES
1 to 150 H.P.
Offering a Wide Range of Closely Controlled Speeds
Send for Bulletin 11-1P1

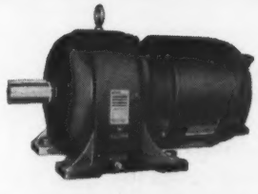
Century Performance-Rating means that you can select precisely the right motor size, speed, frame, mounting and torque characteristics to fit the needs of each installation.

***Performance-Rated*©**
MOTORS
⅛ to 400 H. P.

Mail this coupon for FREE bulletins

CENTURY ELECTRIC COMPANY

1806 Pine St., St. Louis 3, Mo. • *Offices and Stock Points in Principal Cities*



GEAR MOTORS—1 to 125 H.P. (parallel)
⅛ to 3 H.P. (right angle or parallel)
A.C. or D.C., Speed to fit your need
Send for Bulletin 4-1P31

To CENTURY ELECTRIC COMPANY, 1806 Pine Street, St. Louis 3, Mo.

Please send me the following bulletins:

(fill in numbers here) .....

.....

.....

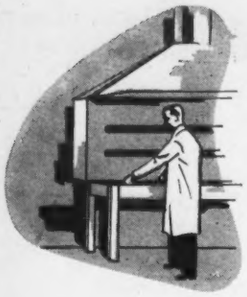
Name.....*Title*.....

Company.....

Address.....

City.....*Zone*.....*State*..... CE-37

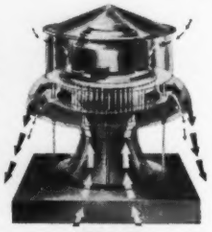
When inquiring check FP 4285 opposite last page



Safely Ventilate
MOISTURE and FUMES

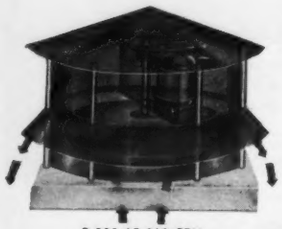
Three outstanding features make Air-Van (R) Power Exhausters especially suited to situations where moisture and fumes are present.

- **The motor is out of the air stream.**
- **A positive air seal-off creates a constant curtain of fresh clean air around the motor shaft. This absolutely prevents fumes from entering the motor housing.**



Direct Drive
150-11,000 CFM.
S.P. to 4.2"

Patented scroll effect design assures positive air removal. Research has shown that without scroll effect, efficiency beyond ¼" S.P. is impossible.



5,000-65,000 CFM.
S.P. to 4".

Other Gallaher features include low silhouette, weather-proof design, low noise levels, and availability in special metals and finishes.

Patents
2188741—2526290
Patents pending

The GALLAHER Company

Pioneers in Research-Designed Power Roof Exhausters

4108 Dodge St. Omaha, Nebraska

When inquiring check FP 4286 opposite last page

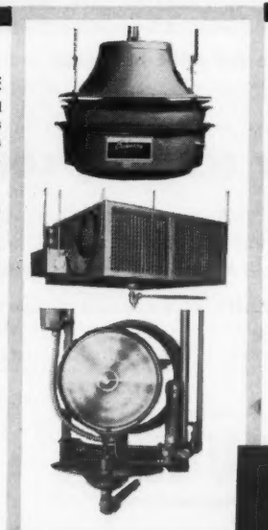
ELIMINATE "DRY AIR" PROBLEMS WITH LOW-COST

HUMIDITY CONTROL

TYPE E
Ideal for small areas; evaporates up to 3 gph with ¼ hp motor.

TYPE BA
For large areas; water or steam units with capacity to 30 gph

TYPE H
Centrifugal humidifier; evaporates up to 8 gph with ¼ hp motor.



Reduce spoilage and dehydration — improve storage and packing conditions . . . with *automatic humidification!*

Bahnson Unit Humidifiers

- A size and type for every processing need
- No floor space: units suspend from ceiling
- Economical operation— as little as $10 per unit per year
- Automatic controls — single or multiple installations
- Complete capacity range; wide choice of units

FREE! Get full details on entire line in Catalog F-4.

Bahnson
COMPANY
WINSTON-SALEM, N. C.

AIR CONDITIONING • HUMIDIFICATION

When inquiring check FP 4287 opposite last page

sanitation and maintenance

Chlorine Dissipation

(*Continued from page* 31)

would scale the equipment quickly. Control of this problem is achieved by adding sodium hexametaphosphate to the make-up water. A constant-feeding proportioning pump feeds the sequestering agent directly into the pasteurizer-water line as it comes from the sand and gravel filters. Concentration of 4 to 6 ppm is maintained at the pre-heating section of the pasteurizers.

Results: In addition to having controlled growth of organisms in equipment, Wiedemann's has found that the system costs only about one fourth that of the best treatment previously used. The residual chlorine maintained in the hot water section of the pasteurizers is 0.25 ppm under normal operation.

This water treatment has not caused any corrosion problems since its inception. Because of high bicarbonate content (590 ppm) the water maintains a pH of between 7.9 and 8.3. Used in other plants not having sufficient natural alkalinity, the addition of a small amount of alkali might be necessary.

(Water chlorinating unit and proportioning pump used to add sodium hexametaphosphate to pasteurizing water system are products of Wallace & Tierman, Dept. FP, 25 Main St., Belleville 9, N. J. Check FP 4288 opposite last page.)

NEXT MONTH —More Feature Articles on Sanitation & Maintenance

- Application of insecticide with long-handled swab
- Simple mounts under 50,000 lb cooker stop building vibration
- Hose eliminates costly pipe take-down on short runs of varied syrup items

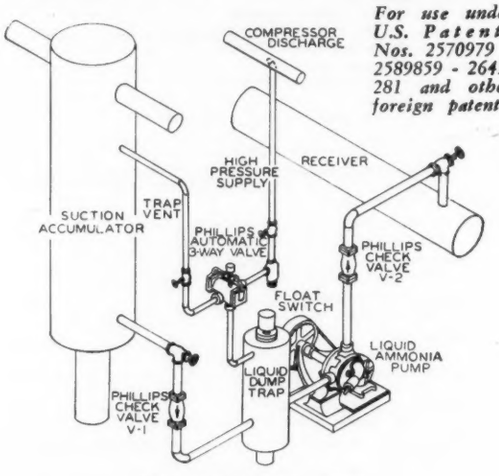
Ammonia "Slop-Over" Handled Automatically by PHILLIPS Liquid Return System

Protects Compressors, Saves Power, Makes Defrosting and Maintenance Simpler

Even in the best designed refrigeration systems, ammonia "slop-over" is a common occurrence. Two stage compression systems, booster systems and control ammonia compression systems subject to fast temperature and pressure changes are especially likely to have liquid in suction lines. This condition can seriously damage compressors which should handle dry gasses only.

Engineers at H. A. Phillips & Co. have devised a system that automatically returns "slop-over" directly to the receiver without regenerating and re-condensing the liquid. As shown in the drawing below, the Phillips Liquid Return System takes liquid ammonia which has collected in the accumulator, drains it through an outlet valve and check valve (V-1) into a liquid trap. Drainage occurs when the trap is at a low pressure. The trap is vented to the accumulator through a three-way valve and vent line. As the trap fills, a float switch is activated, energizing a three-way valve. This valve closes the vent line and connects the compressor discharge to the trap. Pressure builds up in the trap and closes check valve V-1. Pressure in the trap then reaches the same pressure as the receiver, opening check valve V-2 and allowing gravity to carry the liquid to the receiver. If gravity flow is not possible, a liquid ammonia pump is used. High pressure at both the pump inlet and outlet prevents flashing the liquid into gas. When the liquid trap is empty, the three-way valve is de-energized, closing the high pressure line to the trap. The trap is again vented to the accumulator, allowing liquid to drain once again into the trap.

For use under U.S. Patents Nos. 2570979 - 2589859 - 2641-281 and other foreign patents.



Phillips Liquid Return System

This arrangement is highly efficient since only one pound of compression gas is required to move 25 pounds of liquid. There is practically no loss of refrigeration potential of the recovered liquid. The system also permits oil flushed into the accumulator to be easily drained.

A number of "packaged" variations of this system in capacities to 1000-tons are available to handle all arrangements of accumulator and receiver locations. For full details, write . . .

PHILLIPS
AMMONIA CONTROLS

H. A. PHILLIPS & CO.
DESIGNERS AND ENGINEERS
REFRIGERATION CONTROL SYSTEMS
3255 W. Carroll Ave. • Chicago 24, Illinois

When inquiring check FP 4289 opposite last page

sanitation and maintenance

Blocks out old stenciling

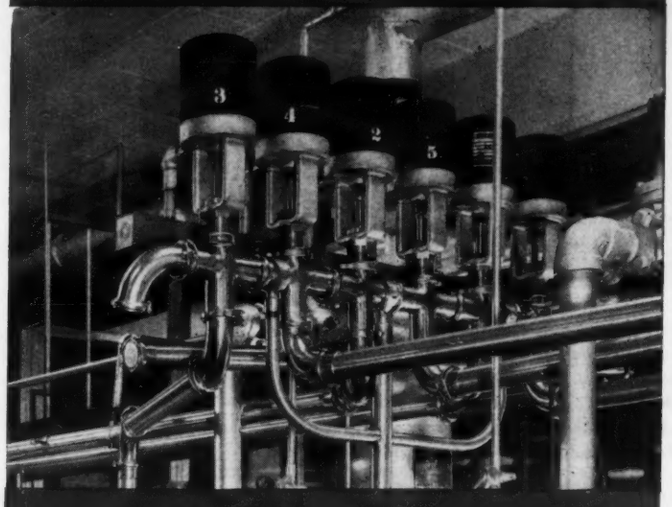
To reuse cartons and other shipping containers, first cover over old stenciling, crayon marks, printing, or labels with blockout fluid (above). Let dry (two to three min), then restencil with ink (below). Ink and blockout fluid are available in aerosol cans

Quick-spraying material permits any container to be restenciled and used again. It is an opaque blockout fluid, tan colored — like corrugated cartons — and waterproof. Dries in two to three minutes. Packaged in easy-to-use aerosol container, spray eliminates the muss, waste, evaporation, and drying out of blockout fluids and paints applied with a brush.

(Stencil-Kover is a product of Reynolds Ink, Inc., Dept. FP, 4500 Euclid Ave., Cleveland 3, O. Check FP 4290 opp. last pg.)

For more information on product at right, specify FP 4291 . . . see information request blank opposite last page.

TRI-CLOVER
Fittings and Valves
play a sparkling role at
Vernor's "DREAM PLANT"



One look at the new sparkling clean James Vernor Company ginger ale plant in Detroit and you know why it is called a "dream plant." It has also been described as the largest, most efficient and most attractive soft drink plant in the world . . . with a capacity of approximately 6 million 8-ounce drinks in a 24-hour period.

To help make this new plant the marvel of sanitation and automatic operation that it is, Vernor's have installed a whole battery of Tri-Clover sanitary stainless steel fittings, valves and accessory equipment in a major portion of their vast network of processing lines. You'll find Tri-Clover fittings and valves in the Syrup Storage Room, in the Mixing Room, in the Extract Room, in the Bottling Room, and in conveying lines connecting these operations. All lines are cleaned in place by the latest recirculation methods.

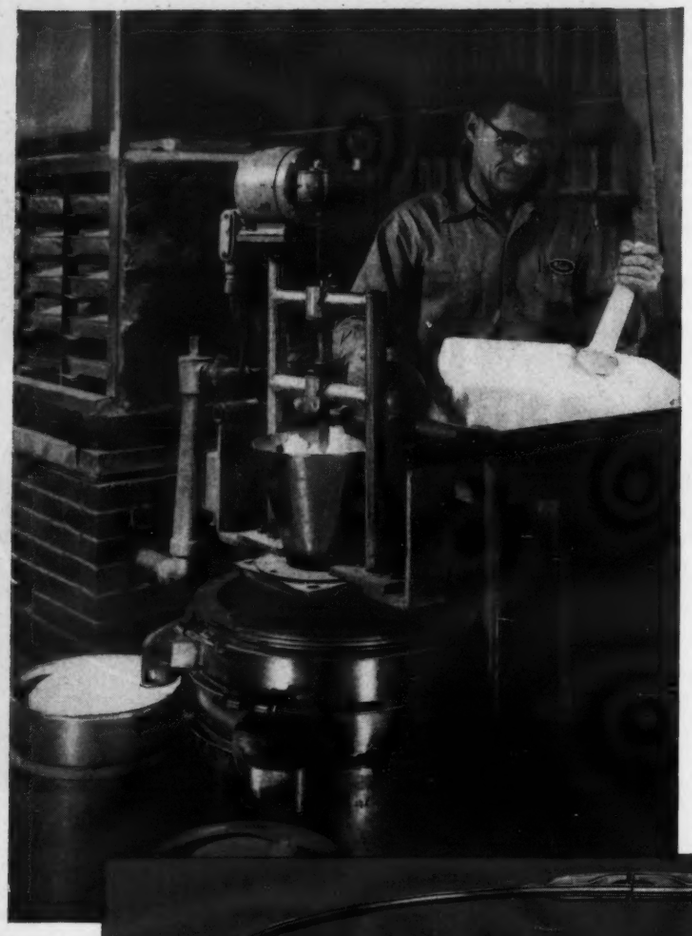
Like Vernor's and many other modern plants, you can achieve new standards of efficiency and sanitation in your bottling operations with Tri-Clover sanitary fittings, valves, pumps, tubing and allied specialties, including both cleaned-in-place and "take-down" lines.

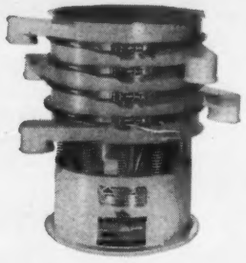
LADISH CO.
Tri-Clover Division
Kenosha Wisconsin

See your nearest TRI-CLOVER

TRI-CLOVER

Export Dept.
2 So. Michigan Ave.





Marman V-Band Couplings Speed Screen Change on Sweco Separators

Southwestern Engineering Company of Los Angeles manufactures stainless steel separators for foods and chemicals. Southwestern relies on Marman stainless steel V-band couplings to hold and seal from one to four screens on each vibrating separator. And, for rapid screen change, Marman's "quick coupler" latch provides easy assembly and disassembly.

Marman's complete line of clamps, straps and couplings can meet your clamping and holding needs, too. Write for full information.

MARMAN PRODUCTS COMPANY, INC.

A SUBSIDIARY OF Aeroquip CORPORATION

11214 EXPOSITION BLVD., LOS ANGELES, CALIFORNIA

MARMAN PRODUCTS ARE MANUFACTURED UNDER VARIOUS U.S. AND FOREIGN PATENTS AND OTHER PATENTS PENDING

When inquiring check CP 4292 opposite last page

sanitation and maintenance

Food processors to have important role at Plant Maintenance & Engineering confab

JOSEPH J. HACKETT, Head Sanitarian, Drake Bakeries, Inc.

JOSEPH MONDSCHEIN, Building Manager, Thomas J. Lipton, Inc.

ARTHUR RAYMOND, Mgr. of Purchasing, American Maize Products Company

R. I. REUL, Industrial Engineer, Food Machinery and Chemical Corp.

JAMES B. STONE, Plant Engineer, Post Cereal Division, General Foods Corp.

A group of 45 outstanding experts, drawn from all industries, will lead discussions at the 7th Plant Maintenance & Engineering Conference, Convention Hall, Philadelphia, Jan. 23.

The conference will extend three days, while the Plant Maintenance & Engineering Show will run one more day.

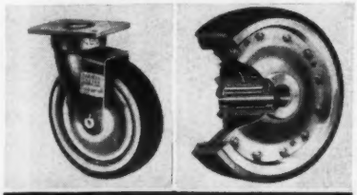
Following are speakers and topics which should be of particular interest to the food processing industry: Joseph J. Hackett, Head Sanitarian, Drake Bakeries, Inc., Brooklyn, N. Y., speaking on "Interior Cleaning of Equipment — Food Industry — Methods and Time Allocation"; Joseph Mondschein, Building Manager, Thomas J. Lipton, Inc., Hoboken, N. J., leading a discussion on "Maintenance of Buildings"; Arthur Raymond, Manager of Purchasing, American Maize Products Co., Roby, Ind., leading a discussion on "Relation of Maintenance and Purchasing Departments"; R. I. Reul, Industrial Engineer, Chemical Division, Food Machinery & Chemical Corp., New York, N. Y., speaking on "Yardsticks to Measure Effectiveness of Maintenance"; James B. Stone, Plant Engineer, Post Cereal Division, General Foods Corp., subject, "Design and Operation of Maintenance Shops".

The 1956 program will be arranged in three groups: (1) There will be two general conferences, which all registrants attend; (2) eight concurrent sectional conferences, at which papers will be given; and (3) 16 concurrent round tables for discussion of special problems.

Visitors planning to attend may write for advance registration cards to Clapp & Poliak, Inc., Dept. FP, 341 Madison Ave., New York 17, N. Y.

DARNELL MANUAL

This data book will help you solve your caster and wheel problems. It shows you how to protect floors, reduce wear on equipment and increase employe efficiency. Ask for your copy today.



Here Is Extra Value

RUBBER TREADS . . . a wide choice of treads suited to all types of floors, including Darnelloprene oil, water and chemical-resistant treads, make Darnell Casters and Wheels highly adapted to rough usage.

RUST-PROOFED . . . by zinc plating, Darnell Casters give longer, care-free life wherever water, steam and corroding chemicals are freely used.

LUBRICATION . . . all swivel and wheel bearings are factory packed with a high quality grease that "stands up" under attack by heat and water. Quick grease-gun lubrication provides easy maintenance.

STRING GUARDS . . . Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

DARNELL CASTERS & E-Z ROLL WHEELS

Always SWIVEL and ROLL

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

When inquiring check FP 4293 opposite last page

IDEAS

gleaned from
research
other industries
managerial practices

Tetrines aid trace metal problems:

- *enrich metal-deficient soils*
- *clarify turbid beverages*
- *prevent oxidation of flavors*

Sequestering agents called "Tetrines" can be used nearly anywhere trace metals present a problem. In beverages, they tie up metallic ions which otherwise would form insoluble, muddying compounds. Discolorations due to formation of iron tannate are also dispelled by these agents.

Flavors in many food products are subject to oxidative degradation, catalyzed by metallic ions. Tetrines effectively sequester these ions, preventing the flavor loss. On the other hand, many soils are deficient in essential trace metals—Tetrines can supply these metals with spray treatment.

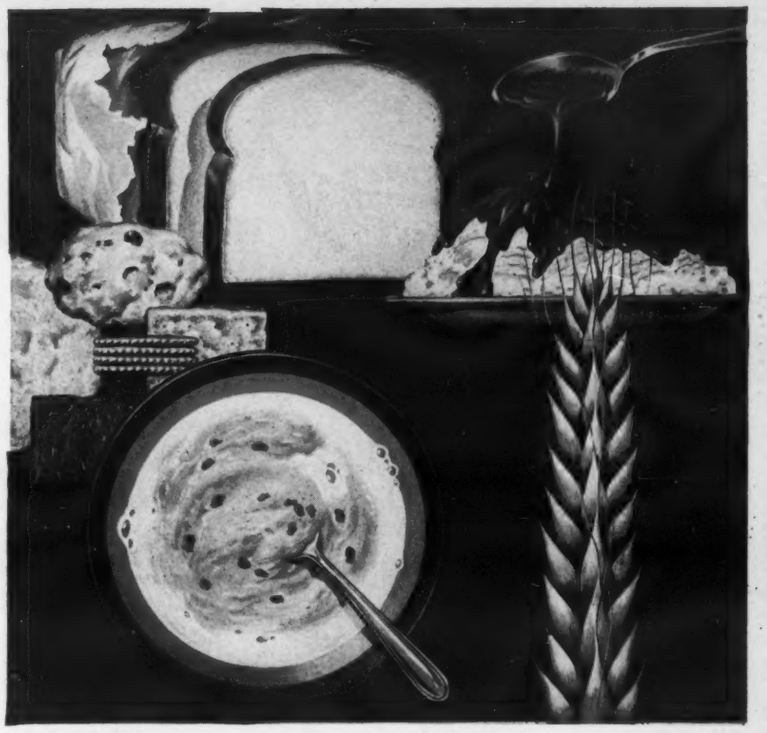
Parent compound of these agents is ethylenediamine tetraacetic acid, and agents are produced either as the acid or as a number of its sodium salts for various purposes. They are stable to storage and most processing temperatures and pH's. Toxicity is of a low order, although prospective users are advised to check with FDA for guidance in this regard.

(Tetrines are produced by Glyco Products Co., Inc., Dept. FP, Empire State Bldg., New York 1, N.Y. . . . or for more information check FP 4294 on form opposite last page.)

Tests show cattle gain weight 14% faster with terramycin

Workers from Chas. Pfizer reported at 128th national meeting of American Chemical Society of tests made feeding cattle with terramycin supplement. Feeding 52 steers (34 test, 18 control), workers found that addition of 3/1000 oz terramycin per day to feed resulted in 14% faster weight gain on 11.5% less feed.

In another test with week-old calves (10 test, 10 control), addition of one oz terramycin per ton of feed resulted in 21% greater average weight gain over 12-week period. Five of test animals were kept on antibiotic for 15 additional weeks, maintained better gains than controls throughout the additional period.



Use

RHOZYME

Diastatic Enzymes

for processing starch in food

You can solubilize, saccharify, or modify food starches *without* altering other ingredients by using low-cost, efficient RHOZYME diastatic enzymes.

For example: In the processing of precooked cereals, diastatic enzymes can be used to reduce the viscosity of the mash and thereby increase the efficiency of roller-drying. Sweet, nonbitter sirups can be produced by saccharifying corn or wheat starch. Bread starch, modified by treatment with RHOZYME enzymes, gives bread of better texture and grain.

If you want to improve the processing of your starch-containing foods, we will be glad to discuss with you how the *specific* and *controlled* action of RHOZYME enzymes can help.

RHOZYME is a trade-mark, Reg. U. S. Pat. Off. and in principal foreign countries.

Write Department SP for full information

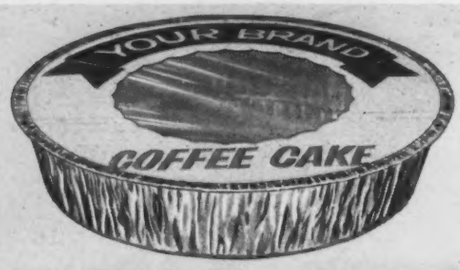
CHEMICALS FOR INDUSTRY

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

When inquiring check FP 4295 opposite last page



ROUND SPECIALTY PAN — Ideal for warmable coffee cakes and casserole dishes, ice cream specialties and other frozen bakery products. Appropriate for the dinner table.

FRUIT PIE PANS — Stronger construction, smoother rims, variety of gauges of foil. Top-in, bottom ratios, vertical depth and other volumetric patterns to adjust pie conformation and scaling weight relationship. For fresh or frozen fruit pies.

Showpieces for today's showcases

POT PIE PANS — Range of sizes to fit any plate-holder. Fully curled edge, dimensional stability, extra bottom strength. Out of the plate-holder onto belt without fail. Can be produced in any desired quantity.

FOIL IS SPARKLING—
catches the buyer's attention.

FOIL IS WARMABLE—
preparation of convenience foods is quick and easy.

FOIL IS PROVEN—
stars in the great self-service market.

Cochran rigid foil containers are practical packages that command atention, offer convenience and give production protection. There's Cochran equipment to fit every closure operation. Let us show you why foil is the answer for your packaging program.

Write Cochran Foil Company, Incorporated, Dept. A-1, 1430 South 13th Street, Louisville 10, Kentucky.

SECTIONAL TRAY
Smooth formed construction, full height dividers. Smooth "no snag" rim fully curled. Standard frozen dinner size.

OBLONG PANS
Ideal for pre-cooked frozen specialties, chicken chaplets, barbeques, cobblers and salads. Standard frozen food package sizes.

Visit us at the National Frozen Food Exposition, Booth 141 — Belmont Plaza, New York City

Cochran RIGID FOIL CONTAINERS

TART PANS • DEEP PIE AND CASSEROLE CONTAINERS • PIE PLATES • ROUND SPECIALTY CONTAINERS • OBLONG AND SQUARE SPECIALTY CONTAINERS • SECTIONAL TRAY

Cochran FOIL COMPANY
Incorporated

FACILITIES AS FLEXIBLE AS FOIL ITSELF

When inquiring check FP 4296 opposite last page

Electronic home range now available bakes potato in five minutes

Baking cakes in six minutes, potatoes in five, roasting meat in half an hour are commonplace performances for electronic ovens, now made commercially in individual home models. In addition to fast

Electronic range for the home

cooking, oven has advantage of remaining cool to touch throughout cooking. Even the vessel containing the food can be picked up without pot holders.

Range operates on regular 220 v current, costs less to run than ordinary electric ranges. Retail cost is approximately $1000.

(Electronic ranges for the home are manufactured by Tappan Stove Co., Dept. FP, Mansfield, Ohio . . . or for more information check FP 4297 on form opposite last page.)

Digestive agent controls odors in waste treatment systems

Essentially a liquid soil conditioner, digestive agent contains lipolytic, amylytic, cytolytic, proteolytic, and other enzymes which catalyze breakdown reactions. Result is odor control wherever it is added to wastes—sludge beds, lagoons, settling tanks, etc. Non-toxic agent is made from a number of seaplants and herb roots.

(Aqua-Zyme digestive agent is produced by Hoover Soil Service, Dept. FP, Gilman, Ill. . . . or for more information check FP 4298 on form opposite last page.)

Chart shows how small errors in weighing can mount up to enormous sums

Actual significance of small weighing errors can be realized, using chart showing how these errors can mount up to large sums over extended periods. For example, as small an error as 1 oz in 100 weighings per day of a product valued at $1/lb will amount to $1875 in a year's time. A more startling example is actual case of a feed mill scale which had consistent errors of 80 to 160 lb per truckload of 6 to 10 ton of corn. In 20 week corn buying season, total cost mounted to $6000, calculated from minimum 80 lb error.

Summations of small errors such as these can be calculated quickly and easily using scale error chart, available free from National Association of Scale Manufacturers, Dept. FP, One Thomas Circle N.W., Washington 5, D.C. When inquiring specify FP 4299 on form which is located opposite last page.

Indicate non-caloric sweeteners "are of no particular value in a reducing program"

Study made by Harvard University Department of Nutrition among 247 obese persons showed that use of non-caloric sweeteners in reducing diets apparently had no effect on success of diets. About half of subjects used these sweeteners, and they experienced about the same amount of success in reducing as did non-users.

Workers stress instead that emphasis should be placed on preventative aspects of weight control. Some of practices employing this viewpoint include eating slowly, mild exercise, cutting down on total food rather than single items, good breakfasts, etc.

Improved rice milling procedures can save greatly in breakage

Studies made by USDA and University of Arkansas show that considerable reduction in rice milling breakage can be effected by following suggested practices. Maintenance of 70 to 80% relative humidity in mill room is one of these. Another is allowing rice to cool in closed container at certain stages of milling.

Workers found that only 20% of breakage occurs during removal of first 75% of bran—remainder occurs while final 25% is taken off. Details of this study, including tables, flow plan, and suggestions for application can be obtained from Southern Regional Research Laboratory, 2100 Robert E. Lee Blvd., New Orleans 19, La.

Wish it were GREEN?

IT IS . . . and eleven other colors, too! "SCOTCH" Brand Cellophane Tape comes in 12 eye-pleasing colors (Green, Red, Orange, Blue, Orange-yellow, Light Green, Yellow, Light Blue, White, Black, Silver and Gold) *plus* transparent. In other words, you can select colors to contrast or harmonize with your package . . . to decorate as well as seal, hold, band, and identify. Furthermore, you can even print on this versatile tape if you wish. And remember, "SCOTCH" Brand Cellophane Tape sticks tighter than ever before...costs *less* to use than ever before. Get it from your regular distributor, or write us for complete information.

Always specify "SCOTCH" Brand, the quality tape . . . and stick with it!

COLORED CELLOPHANE TAPE

. . . one of more than

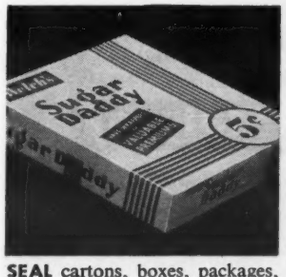
300 Pressure-Sensitive Tapes

for industry, trademarked . . .

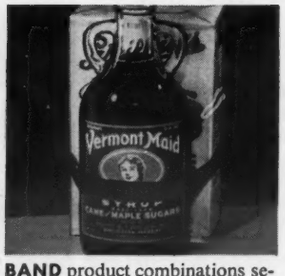
REG. U. S. PAT. OFF.

SCOTCH BRAND

Look what you can do with it!



SEAL cartons, boxes, packages, bags with "SCOTCH" Brand Cellophane Tape. Tape holds tightly; keeps contents fresh. Colors can be used to add attractiveness to packages.



BAND product combinations securely together with sticks-at-a-touch Cellophane Tape. Colored tape can contrast with or match color of label; holds firmly from packaging line to pantry shelf.

SPEED packaging operations with dispensers designed for the job. Above: Type "P" Can Sealer applies colored "SCOTCH" Brand Cellophane Tape completely around can lid.

FREE BOOKLET shows ways "SCOTCH"-Brand Tapes can cut packaging costs; speed production. Write on your letterhead: Minnesota Mining and Mfg. Co., St. Paul 6, Minn., Dept. IF-16.

The term "SCOTCH" is a registered trademark of Minnesota Mining and Manufacturing Co., St. Paul 6, Minnesota. Export Sales Office: 99 Park Ave., New York 16, N.Y. In Canada: P.O. Box 757, London, Ontario.

When inquiring check FP 4300 opposite last page

BULK SWEETENER HANDLING SPEEDS PRODUCTION, CUTS COSTS

Sweetose Syrup, piped directly from your storage tanks, travels in a closed, sanitary system. A meter measures just the right amount of sweetener, then stops the flow automatically. This automatic handling system stops "manhandling" of sweeteners, improves quality control, cuts costs. See about automatic handling in your plant now.

Sweetose *never* masks a flavor!

Crystal clear, Sweetose syrup brings out full, fine flavor, retains natural color, improves texture.

Want to give your processed foods a real profit-building competitive advantage? You can . . . with easy-to-use Sweetose, Staley's enzyme-converted corn syrup. Used with sucrose, Sweetose gives accurate sweetness control that means well-balanced, unmasked, delicious flavors. This remarkable liquid sweetener helps retain fresh, natural color and body and greatly improves the eye appeal of your products. Try Sweetose in your products soon, and prove its sales-building advantages to yourself. See your Staley representative or write us direct for more information.

Sweetose®
SYRUP

A. E. Staley Manufacturing Company, Decatur, Illinois

PRODUCTS FROM CORN
Staley's
AND SOYBEANS

OTHER QUALITY PRODUCTS
Regular, Intermediate Corn Syrups
Canners Starches
Refined Corn Oil
Zest®, Monosodium Glutamate
Sta-Sol® Lecithin

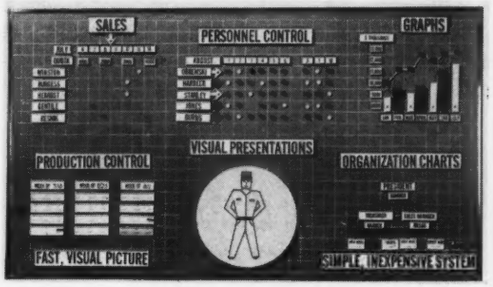
When inquiring check FP 4301 opposite last page

Magnetic control board gives easy, quick visual record

Can be used for production schedule, sales records, graphs, charts, etc.

Visual control board, consisting of magnetic steel board and various magnetic visual elements, can be used in multitude of applications. Some of these include production schedules, sales records, graphs and charts, inventory control, personnel records.

Standard board measures 24 x 36", although any special size can be made. Construction is magnetic



Magnetic control board dramatically portrays records of many kinds

steel bonded to masonite. Visual elements available for placing on board include magnets of various colors and sizes, card holders, acetate tape for graphs, graph paper, colored plastic bars, circular identification stickers, magnetic arrows.

(Magne-trol Control Board is produced by Methods Research Corp., Dept. FP, 535 Mosel Ave., Staten Island 4, N.Y. . . . or for more information check FP 4302 on form opposite last page.)

Like to have a photo department? Here's how to start, operate one

Many food processors now operate photographic service departments in their own plants to aid in many operations—production, research, etc. A 60-page booklet published by Eastman Kodak describes how such a department can be set up and operated. Emphasis is placed on distinction between service and promotional photography—services photos are intended to be frankly functional, to convey an idea as clearly as possible. "Glamor" lighting, settings, professional models, etc. associated with promotion are dispensed with.

Booklet describes functions of this type photography, outlines facilities required and actual operation of a service department. It is priced at 50c and is available at Kodak Industrial Dealers.

(Continued from page 9)

FDA Standards

List of foods for which standards have been established is available from Food and Drug Administration, Washington 25, D. C.

Cottage Cheese: Following rejection of a proposed definition and standard of identity for "partially creamed cottage cheese", the Borden Co. and others have requested a hearing. Date had not been set at press time.

Canned Prune Juice: Time was extended to Dec. 27 for proposed adoption of a definition and standard of identity for canned prune juice, a water extract of dried prunes. Comments on the proposal indicate an eventual hearing.

Antioxidant: Recent report gives final approval for use of Nordehydroguaiaretic acid (NDGA) antioxidant. It has been shown to be a harmless substance, suitable for those foods which may, under terms of statute, legally contain this chemical preservative.

USDA Grade Standards

Checklist of new or proposed grade standards issued by USDA follows: Except where noted, complete texts can be secured from USDA, Fruit and Vegetable Branch, Processed Division, Washington 25, D. C.

Orange Juice (Crystals): US Standards have been proposed following request of processors, other users. Proposed grades are US Grade A or US Fancy; US Grade B or US Choice; and Substandard. Standards would apply to a granular product reduced to less than 3% moisture and packaged with a desiccant to further reduce moisture. Quality is evaluated by color, absence of defects, and flavor. Requirements for Grade A would be Brix-acid ratio of not less than 12 to 1 nor more than 18 to 1 and recoverable oil content of not less than 0.006 nor more than 0.012 ml per 100 ml of reconstituted juice. Comparable Grade B requirements would be Brix-acid ratio of not less than 10.5 to 1 nor more than 10 to 1 and recoverable oil content of not less than 0.008 nor more than 0.20 ml per 100 ml of reconstituted juice. Interested parties were given until Dec. 27 to comment.

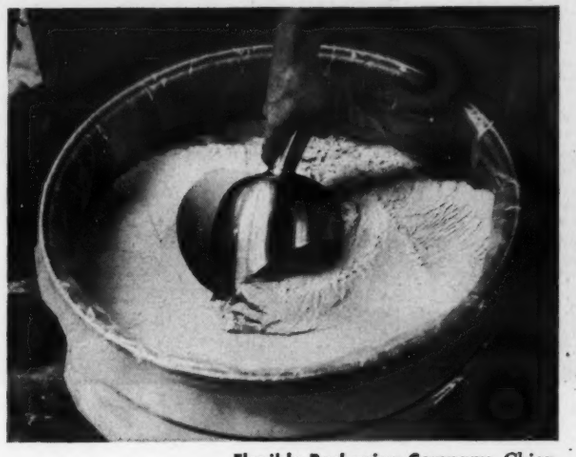
Grapefruit Juice (Crystals): Comment was due Jan. 9 on proposed standards developed at request of processors. Grades would be US A or Fancy; B or Choice; and Substandard. Requirements for Grade A would include Brix-acid ratio of not less than 8 to 1 nor more than 14 to 1 for unsweetened grapefruit juice; not less than 11 to 1 nor more than 14 to 1 for sweetened, and a recoverable oil content of not less than 0.006 nor more than 0.012 ml per 100 ml of reconstituted juice. Comparable B requirements are a Brix-acid ratio of not less than 7 to 1 nor more than 14 to 1 for unsweetened juice; not less than 11 to 1 nor more than 14 to 1 for sweetened, and recoverable oil content of not less than 0.008 nor more than 0.020 ml per 100 ml of reconstituted juice.

Frozen Grape Juice Concentrate: Interested parties have until 60 days from last Dec. 7 to comment on new proposed grades. A previous proposal had been withdrawn "to permit further study by the Department and industry". The new proposed standards provide for classifying the product as US Grades A or Fancy; B or Choice; and Substandard. Standards would be applied to concentrates prepared either from Concord grapes of the Labrusca species, from any single variety type other than Concord, or from two or more varieties of grapes.

ANOTHER WAY it pays to package in film made of BAKELITE Polyethylene

Polyethylene liner protects contents against caking due to moisture, and loss of valuable oils.

Ease of re-closing polyethylene liner maintains package tightness and is a great advantage.



Flexible Packaging Company, Chicago, Ill., made the polyethylene liners of queen film produced by **The Visking Corp.,** Terre Haute, Ind.

"...a completely dependable packaging method"

"We know it will retain all of its flavor quality." The product in this case is food flavorings and spices made by the Wm. J. Stange Company, Chicago, Ill.

It is a sensitive product. According to F. K. Koepke, assistant sales manager, "we cannot live with anything less than a completely dependable packaging method. First, we must keep moisture out, and second, loss through absorption by the container itself of flavor-giving oils must be minimized."

Using a polyethylene liner, "we seal every bit of our laboratory flavor and spice right where we want it. More than this, the liner protects flavor at the customer's location – generally kitchens subject to high humidity and heat. Both conditions can affect our products. However, polyethylene has been successful in protecting our products until actually used. The added cost over an unlined container is so small compared with the advantages that it is not even a consideration."

Flexibility. Easy sealing and reclosing. Chemical inertness. Brand identification. Availability and economy. These are a few of the important benefits of packaging in film made of BAKELITE Brand Polyethylene. Call your packaging supplier.

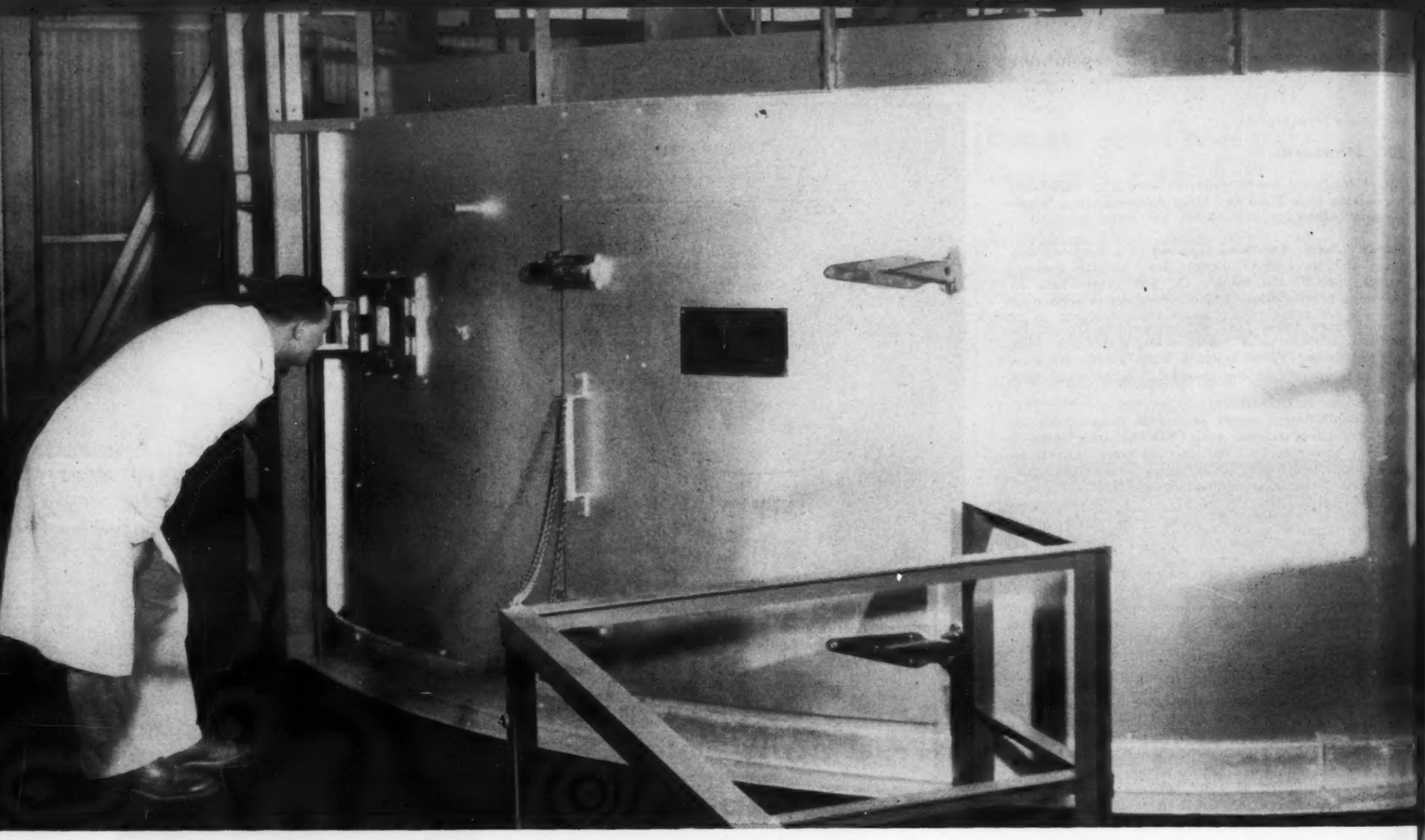
SPECIFY FILM MADE OF

BAKELITE BRAND **Polyethylene Plastic**

BAKELITE COMPANY, *A Division of Union Carbide and Carbon Corporation* UCC 30 East 42nd Street, New York 17, N. Y.

The term BAKELITE and the Trefoil Symbol are registered trade-marks of UCC

When inquiring check FP 4303 opposite last page



HIGH QUALITY FLAVORS . . .

. . . produced in spray dryer engineered for processing heat-sensitive products

J. M. WENNEIS
Technical Director, Norda, Inc.
as reported by FP Staff

All metal surfaces of dryer kept at low temperature by patented method of introducing drying air

Two-stage atomization of liquid feed and recirculation of fines help to obtain more-uniform product

TOP quality flavors from the easily dehydrated imitation products to the very-difficult-to-dry natural flavors and fruit juices are now available from Norda, Inc., New York City, through use of a new spray dryer. Their spray dryer, the largest in the industry for flavor products, has been especially designed for processing heat-sensitive materials. It is designed to atomize the liquid in two stages to secure more-uniform size droplets.

All regular imitation flavors will be produced, including strawberry, raspberry, cherry, pineapple, banana, grape, nut almond, rum, and custard. Also available are the natural essential citrus oils of lemon, lime, orange, and the combination lemon-lime in spray-dried form.

On schedule is production of the following natural fruit products which pilot-plant runs in an experimental dryer have shown to have excellent flavor characteristics: fruit juices dried with added protective colloid, and comminuted fruits, especially strawberry and banana, dried with added colloidal material. Colloidal suspensions are also used with the imitation flavors.

Flavors retained in spray-dried products

This method of spray-drying (incorporating protective "skin-forming" colloids) is used, since experience in the flavor drying field has demonstrated that appreciable flavor loss during drying, as well as in subsequent storage, is prevented. Specifically,

Conical bot
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Largest spray

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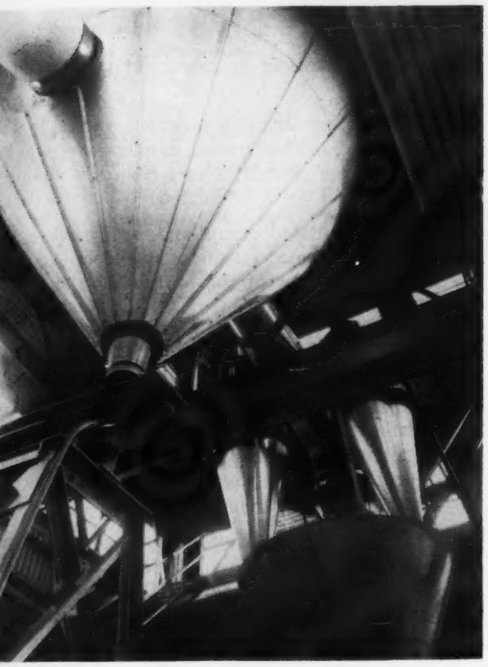


Conical bottom of drying chamber is shown at left; at right are cyclones for recovering fines from gases exhausted to atmosphere

Largest spray dryer for flavor products has internal diameter of 18 ft

he flavor or flavor base is emulsified and dispersed n the form of minute discrete droplets throughout water solution of an edible vegetable gum. Various gums may be used; when dry, they are impervious o the flavor, although permeable to the smaller vater molecules. Hence, as soon as the surface of he flavor emulsion becomes dry, flavors no longer scape and are retained during the remainder of he drying as well as subsequent storage.

Under these conditions, the flavor loss depends on ow rapidly the surface skin (case hardening) is ormed. If the drying is very slow (no case harden-ng), considerable quantities of flavor are lost dur-ng the drying operation, and the loss continues during subsequent storage. If drying is fast, case ardening occurs and loss is only a few percent.

Easily oxidized materials can be spray-dried using hot ir, because the solvent vapors evaporated from the iquid droplets form a protective atmosphere. Thus, enzaldehyde, which is rapidly oxidized even at oom temperature, when mixed with sugar and veg-table gum can not only be spray-dried but the

(*Continued on next page*)

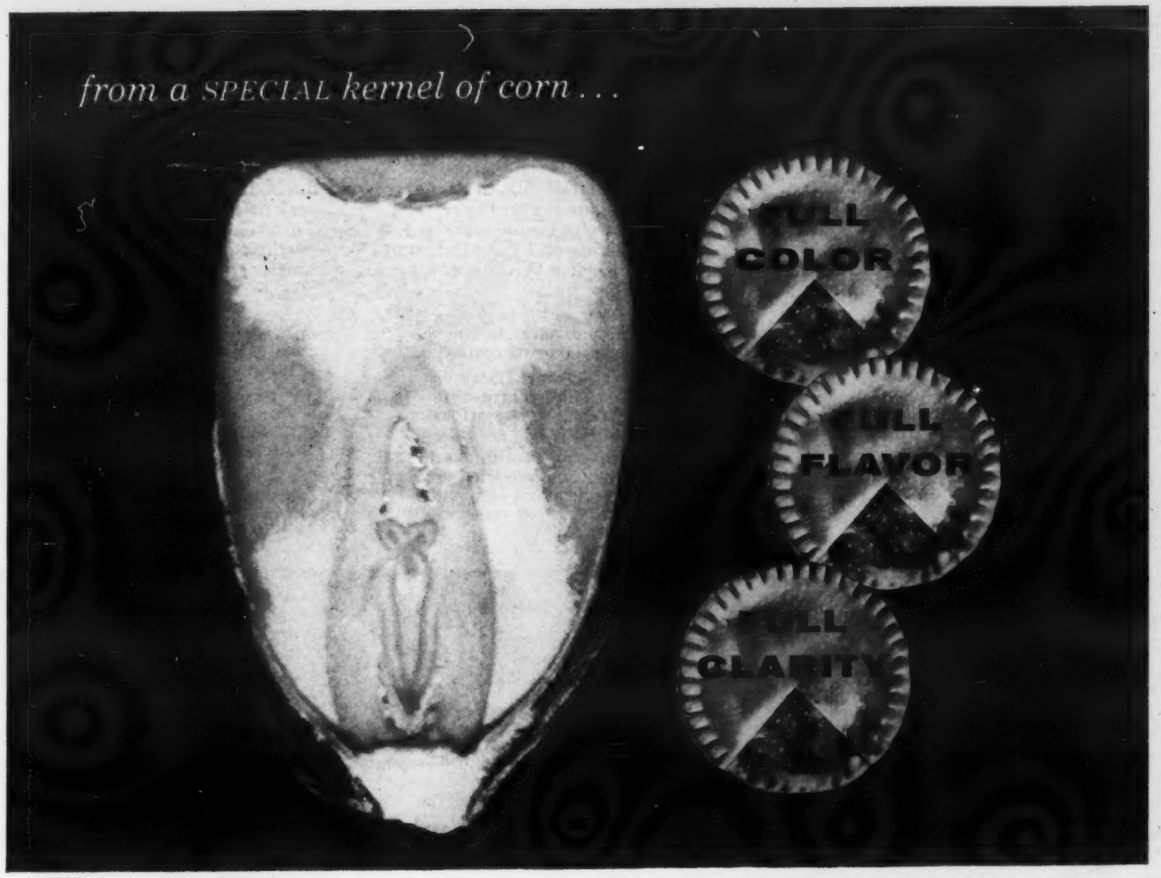


Photo courtesy of Corn Industries Research Foundation, Inc.

CLEARJEL® fruit pie stabilizer

Take cherries. Peaches. Berries. Any fruit. Make a pie filling. And retain the brilliant fruit color! Orchard fresh flavor! The sparkling clarity of full-bodied fruit in clear, stabilized juices. With just a semblance of flow!

How?

By using National's CLEARJEL. Not an ordinary corn starch. CLEARJEL is refined from a unique hybrid corn grown especially for National. It resists "set back" after cooking. Remains clear. Never imparts a masking undertone of cereal taste. Never interferes with nature.

Prove it! Bake a test pie. Ask your jobber for CLEARJEL. Or write for FREE recipes and a FREE CLEARJEL test sample.

National
STARCH PRODUCTS INC.

270 Madison Avenue, New York 16 • 3641 So. Washtenaw Avenue, Chicago 32 • 735 Battery Street, San Francisco 11

When inquiring check FP 4304 opposite last page

V 17 1 JAN 56 UMI

If you use MILK or

N.F.D.M.S.

...see how

Sweet Dairy Whey

can improve quality
and reduce costs TOO!

SWEET DAIRY WHEY is an improved dairy ingredient that perfects the richness of "old-fashioned flavor" in modern food preparations. It improves color, texture, shelf-life and appearance of food products. And it can save you money too — up to 50% of your dairy ingredient costs — by replacing part or all of your present dairy solids.

If you use milk, or nonfat milk products, it will pay you to investigate Sweet Dairy Whey. It's spray dried, meets or exceeds U. S. Extra Grade standard. In addition to extensive use in the baking and meat industries, here are just a few of the ways Sweet Dairy Whey is being used to improve food products today:

Sherbet — for better control over texture, appearance, flavor. Reduces flavoring costs, too.

Candy — Sweet Dairy Whey preserves natural fresh flavor, texture and sweetness longer . . . provides superior eating qualities.

Cream-style foods — for smoother heavy-bodied cream soups and sauces with natural flavor. Improved reconstituting qualities.

Tomato soups — for greater heat stability, more original tomato taste and no separation before or after sterilization.

Prepared mixes and batters — for richer, golden-brown color, appealing milk flavor, and for tender, fluffy texture.

Soft drinks — for improving body characteristics in fruit juice type drinks . . . helps achieve proper "cloudiness" effect.

Pound for Pound
Sweet Dairy Whey is Better!

Compared with milk or nonfat milk solids, Sweet Dairy Whey has:

- 50% more lactose (milk sugar) for natural flavor, dairy richness, color appeal, and tenderness.
- 50% more milk albumin to keep food tender, moist, fresh — longer.
- 25-50% lower cost . . . plus more of the essential milk constituents, more milk minerals and B-complex vitamins. And it's casein free!
- Uniform quality the year around. Prompt delivery.

Write Technical Service Department for additional information and working samples

Sweet Dairy Whey

A "VALLEY FRESH" PRODUCT

WESTERN CONDENSING COMPANY
APPLETON, WISCONSIN
World's Largest Producer of Whey Products

32 plants
coast-to-coast

When inquiring check FP 4305 opposite last page

Spray-dried Flavors

(*Continued from preceding page*)

spray-dried product can be stored for years without deterioration.

Drying in a spray dryer is extremely rapid. In the dryer described in this article, droplets are reduced to 20% moisture content, 2 feet from the atomizer inlet.

Introduction of heated drying air directly below the feed inlet is a patented feature of the dryer. To keep the wall temperatures of the hot air duct at a low temperature, filtered room-temperature air is blown into an annular space surrounding the hot air duct as shown in the accompanying diagram on next page (walls of the ducts are insulated). Lower part of the air duct is a streamlined "V" shape to prevent accumulation of spray-dried product on it. By this means, all metal surfaces exposed to the spray or the spray-dried product are kept substantially at the exit gas temperature, which is 215°F.

An additional advantage of this design for introducing heated drying air is reduction in heat loss from the drying chamber. These chambers have a large exterior surface, and lower temperature of this exterior surface reduces heat loss fom the dryer.

Two-stage atomization

The centrifugal atomizer which feeds the liquid into the dryer is designed for speeds up to 15,000 rpm. Liquid is evenly distributed around the shaft of the atomizer and falls on a pyramidal section as shown in the accompanying diagram. Centrifugal force, which increases with the increasing diameter of the successive steps of the pyramid, distributes the liquid in a vertical direction and results in even distribution of the liquid over the channels in the atomizer wheel.

After droplets leave the pyramid, they are thrown into a series of radial channels (see photo). Second stage of atomization occurs as the thin film of liquid in the atomizer channels leaves the atomizer. Design of the centrifugal atomizer can be varied to result in high bulk density or low bulk density products.

At the Norda installation, about 18% of the product is collected as fines. These fines are redissolved and recirculated through the dryer. Only the more uniform-sized spray-dried material recovered in the drying chamber is collected as the product.

Material balance

A typical flavor emulsion material balance for the spray-drying operation at Norda follows:

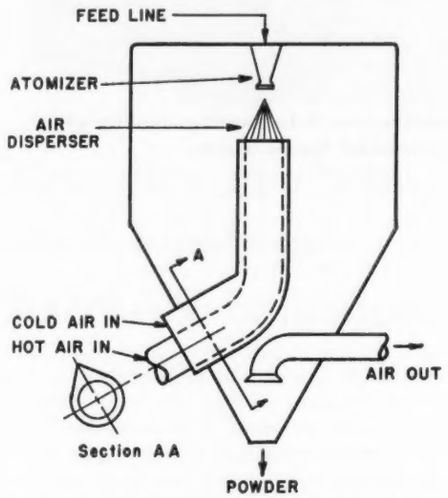
	Lb/hr
Feed (65% moisture)	1200
Water evaporated	750
Dry solids produced (3 to 5% moisture)	450

The 450 lb of dry solids are distributed as follows:

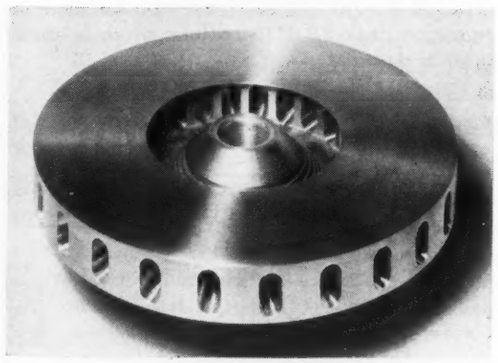
Fines collected in dust collector	70
Fines lost in exhaust gases	3
Yield as product	377

As previously noted, the fines collected in the dust collector are recirculated.

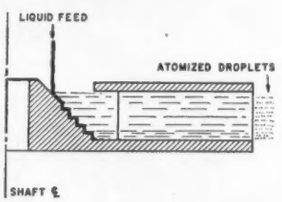
Some 5000 cfm of filtered air is heated electrically, 640 KW being required to heat air from 0°F to 450°F. To eliminate the possibility of any contamination from the heating source, electrical heaters were specified.



Cross-section of dryer showing how cool air in annular duct "insulates" hot air duct from drying chamber



Cross-section of centrifugal atomizer shown in photo above



(*Continued on next page*)

Can you meet the demand for energy foods?

General Mills *Pro-80* concentrate gives foods real energy appeal

Pro-80, General Mills high protein gum gluten, helps you profit from today's demand for extra energy. Breads, baked foods, macaroni, cereal products or health foods, to mention a few, all have more energy appeal with Pro-80 added. It supplies extra protein, and cuts down the proportion of fats and carbohydrates.

Foods enriched with Pro-80 have other sales benefits, too. Your ads and promotions can sell the value of high protein foods for weight reduction, vitality, good health and sturdy child growth. You'll aim right at the heart of consumer desires.

Over 80 Per Cent Protein

Pro-80, made from wheat flour, is over 80 per cent pure protein (moisture free basis). Bland, safe, compatible with other foods, Pro-80 adds no unpleasant taste or odor. It is an economical food extender, too—far cheaper than most other protein sources.

So try Pro-80 in your foods. Add the appeals of greater energy, better health, safer weight reduction—all powerful selling points that can help you earn higher profits.

Send for this informative booklet today . . .

Mail the coupon below for a free test sample of Pro-80 gum gluten and a booklet explaining the sales value of protein-fortified foods.

try *Pro-80* Gum Gluten

NEW WHEAT PROTEIN CONCENTRATE BY

General Mills

Special Commodities Division
Minneapolis 1, Minnesota

General Mills
Special Commodities Division
Minneapolis 1, Minnesota

Gentlemen: Please rush me a free test sample of Pro-80 gum gluten and a copy of your booklet, "How to Win Food Sales with Pro-80."

Name_____

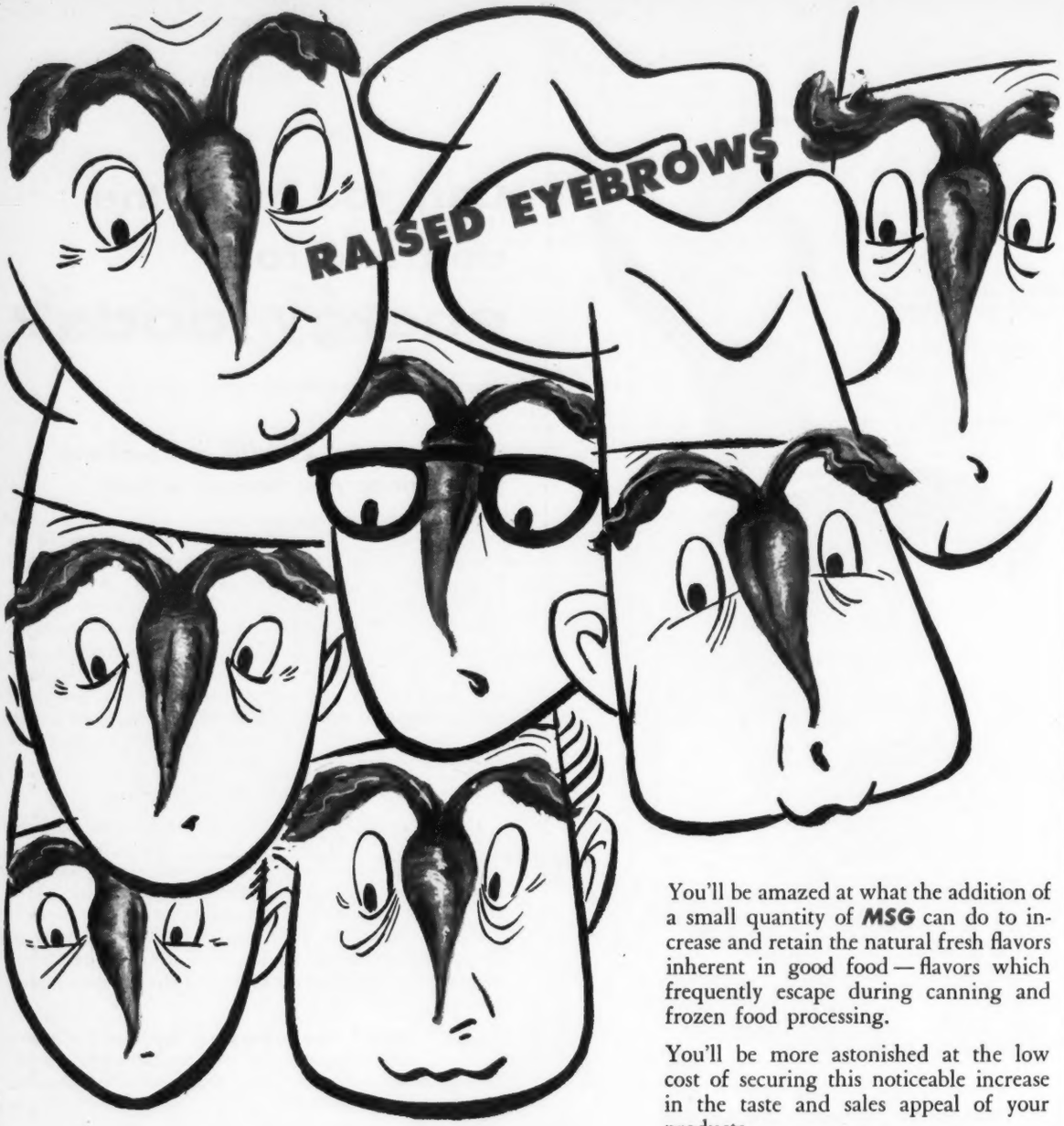
Firm_____

Address_____

City_____ Zone____ State_____

FPI-56

When inquiring check FP 4306 opposite last page



You'll be amazed at what the addition of a small quantity of **MSG** can do to increase and retain the natural fresh flavors inherent in good food — flavors which frequently escape during canning and frozen food processing.

You'll be more astonished at the low cost of securing this noticeable increase in the taste and sales appeal of your products.

Discover **"The Secret of Good Taste"** *— Try Great Western's*

MSG
99+% Pure Mono Sodium Glutamate Crystals
derived from sugar beets

A Product of
AMERICAN AGRICULTURE

We invite inquiries from current and prospective users of MSG

THE GREAT WESTERN SUGAR COMPANY
Denver, Colorado

in: vegetables, meats, canned soups, poultry, seafood, sauces, gravies, seasonings, and frozen foods.

When inquiring check FP 4307 opposite last page

Spray-dried Flavors

(*Continued from preceding page*)

(Spray-dried flavors produced in this dryer are available from Norda, Inc., Dept. FP, 601 West 26th St., New York 1, N. Y. . . . or for more information check FP 4308 on form opposite last page.)

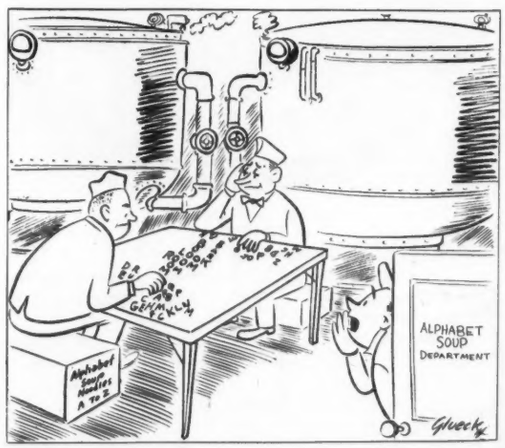
(Nerco-Niro spray dryer system described in this article was designed and constructed by Nichols Engineering & Research Corp., Dept. FP, 70 Pine St., New York 5, N. Y. . . . or for more information check FP 4309 on form opposite last page.)

Develop starch to improve quality of pre-cooked frozen foods

A specialty starch has been developed as an ingredient in frozen food products which are not initially processed under high temperatures. Tradenamed Col-Flo, this starch possesses many of the desirable features of supplier's Clearjel starch, used in retorted foods.

When Col-Flo is included with such products as frozen soups, sauces, and gravies, there is a definite improvement in product texture upon defrosting. Low temperature or freeze-thaw periods do not influence stability of the starch. It shows good stability and does not tend to develop cloudiness in product's liquid when stored in the temperature range of 32-40°F.

(Col-Flo starch is a development of National Starch Products, Inc., Dept. FP, 270 Madison Ave., New York 16, N. Y. . . . or for more information check FP 4310 on form which is located opposite last page.)



Mind your P's and Q's boys — here comes the boss!

Dime's worth of soluble gum thickens gallon of water to non-flowability point

Water-soluble non-polyuronide gum is wholly edible, can be used to thicken water phase of many aqueous mixtures while providing colloidal stabilization. Three ounces in gallon of water, allowed to stand two hours unheated, will produce barely pourable mixture.

Gum is white, free-flowing powder with moisture content of about 10%. Water solutions are clear, almost colorless, tasteless, odorless, non-toxic, have thixotropic characteristics. Dispersion of gum in water is easily attained by sifting powder into water under brisk agitation, maintaining agitation for 5-10 minutes.

(Burtonite V-7-E is manufactured by Burtonite Co., Dept. FP, 1 Hamilton Pl., Nutley 10, N.J. . . . or for more information check FP 4312 on form opposite last page.)

Piglets weaned more successfully using feed enhancer aroma

Low feed intake during piglet weaning periods can be greatly alleviated if aroma feed enhancer is added to feed. Not a flavor, but an odor, enhancer is effective in both mash and pellet forms. It also helps attain maximum feed ultilization throughout life of hog. Modified forms are available for cattle and poultry feeds.

Odorama is produced by Dodge & Olcott, Inc., Dept. FP, 180 Varick St., New York 14, N.Y. . . . or for more information check FP 4313 on form opposite last page.

NEXT MONTH —

Make-it-yourself device eases addition of monosodium glutamate to meat products

Open new markets with the help of EASTMAN antioxidants

Ever develop a food product which could be given only local distribution—or perhaps couldn't be marketed at all—because of limited stability? If so, it probably contained an oxygen-sensitive ingredient, such as an oil or a fat, which caused the trouble.

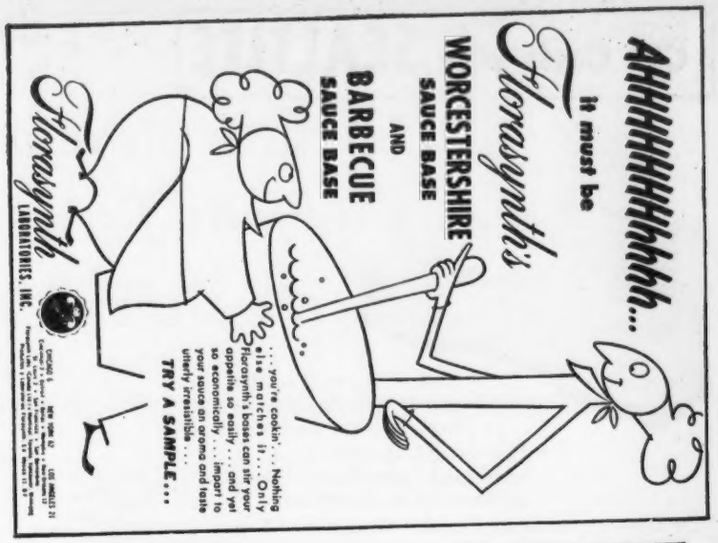
Let Eastman help you combat this problem with its complete line of Tenox antioxidants. Our staff of food technologists would welcome the opportunity of working with you on the proper use of these antioxidants. Assisting other food processors in this manner, we have helped send many fine products from the laboratory shelves to the market place.

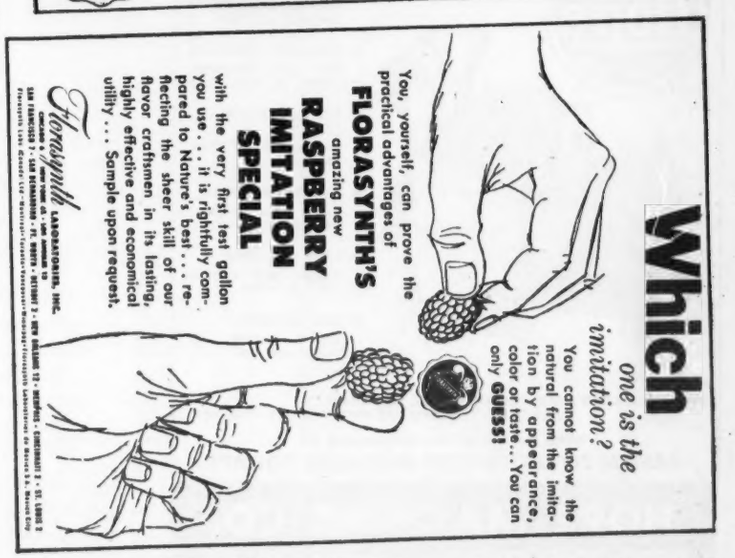
Since Eastman manufactures the widest range of antioxidants, we have no axe to grind in favor of any one. You can be certain our recommendation will represent the most economical and effective stabilization possible against oxidative deterioration.

For more information about Tenox, write to Eastman Chemical Products, Inc., Kingsport, Tennessee—a subsidiary of Eastman Kodak Company.

Tenox Eastman food-grade antioxidants

When inquiring check FP 4311 opposite last page




Which
one is the imitation?
You cannot know the imitation by appearance, color or taste...You can only GUESS!
You, yourself, can prove the practical advantages of
FLORASYNTH'S
amazing new
RASPBERRY IMITATION SPECIAL
with the very first test gallon you use . . . it is rightfully compared to Nature's best . . . reflecting the sheer skill of our flavor craftsmen in its lasting, highly effective and economical utility . . . Sample upon request.
Florasynth LABORATORIES, INC.

FLORASYNTH LABORATORIES, INC. — Executive Offices — 900 Van Nest Ave. (Box 12), New York 62, New York

EXECUTIVE OFFICES — 900 Van Nest Ave., (Box 12), New York 62, N. Y.

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Cut Costs with SEALTITE

- Delivers a well settled, nicely squared bag at top, bottom and sides
- Pre-scored, double fold, uniformly glued seal keeps product in and dirt out
- Uses any standard make of gusseted bag — no royalties
- Seal readily opened, yet tamper-proof
- Seals 30 to 50 bags per minute
- Users report costs reduced up to $500.00 per month per machine

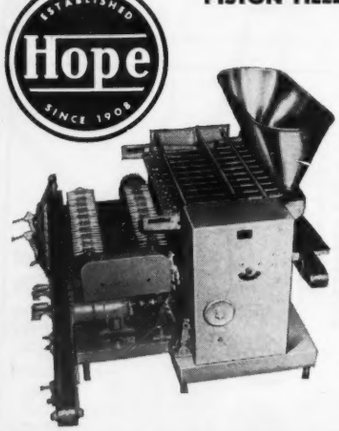
Write for complete information

CONSOLIDATED PACKAGING MACHINERY CORP.
BUFFALO 13, N.Y.

When inquiring check FP 4315 opposite last page

Another First!
HEAVIEST DUTY
PISTON FILLER EVER BUILT

ESTABLISHED Hope SINCE 1908



★ **RISING TABLE** Infinitely adjustable. No cam rails or stops

★ **QUANTITY CONTROL** One point adjustment, vernier on each piston

★ **NO CONTAINER— NO FILL** Save product and clean-up time

★ **ADJUSTABLE HEAD** Filling head on heavy duty jack screws

★ **NEW JAR FEED** Straight push with up and over action

★ **JAR CLEANER** Double turnover jar cleaner—optional

IDEAL FOR COLD PACK PEANUT BUTTER, MAYONNAISE JAMS, JELLY, PRESERVES AND VISCOUS PRODUCTS

Write for information and Catalog 45

FASTEN TO LETTERHEAD AND MAIL TODAY!

HOPE MACHINE CO.
9400-20 STATE RD. PHILA. 14, PA.

When inquiring check FP 4316 opposite last page

Cooking and salad oil (left) and lemon juice (right) are packaged in unplasticized vinyl in Germany. Package is opened by piercing small hole in an upper corner, closed by bending down corner. Package is made from printed sheet formed into tube, which is sealed onto plastic bottom, filled, and heat-sealed

German vinyl film has low vapor transmission, high heat tolerance

No plasticizers are used . . . holds oils, gases, other liquids; operating temperature reported at 252 to 284°F

Vinyl film from Germany for packaging uses has no plasticizers, can be used as highly flexible film or made into rigid "see-through" cans and portion packages. The polyvinyl chloride material is odorless, taste-free, and practically impermeable to moisture vapor, gases, liquids, oils. It has high chemical stability, and is practically nonflammable.

The unplasticized PVC film is said to be stable at 212°F, which makes it suitable to heat treatment of contents after sealing. At temperatures around 125°C (257°F), the packages maintain their dimensions and mechanical properties, making them suitable for short periods of pressure processing. The low moisture vapor transmission rate plus the adaptability of plastic films to shallow packages make it promising for irradiation sterilization.

Photos demonstrate some of the products for which the material is used in Sweden and Germany. Printing by letter-press, gravure, or screen process gives a permanent, scratch-free surface that will not pick. The hard, unplasticized sheeting comes in 15 thicknesses ranging from 0.0012 to 0.020 inch, in transparent to opaque forms, colored or colorless. It can be heat-sealed, laminated, or vacuum-formed.

Research and Development Laboratories for Aluminum Foil Packaging

Report No. 1 of a Series by Reynolds Metals Company

Approximate range of physical properties

Tensile strength (longitudinal, psi)	7000-8000
Elongation at break (longitudinal, %)	30-100
Modulus of elasticity (psi)	280,000
Flexural strength (psi)	14,200
Compressive strength (psi)	11,300
Thermal stability (Martens, °C)	65-70
Sp heat (kcal/kg/°C)	0.24
Shrinkage (15 min @ 212°F, %)	2-5
Operating temp (°C)	122-140
Water absorption (mg/100 cm² after 7 days @ 68°F)	<20

Water vapor transmission rate (90% against 0% RH, gm/100 sq in/24 hr)

Foil thickness	Rate
.0016"	0.4 gm
.0039"	0.16 gm
.0078"	0.089 gm
.012"	0.072 gm

Unplasticized vinyl film is used for these products in Europe: starting left, top, pickled herring; soap; coffee; white raisins; below, dried fresh fruits ▶

Standing row shows pickled pearl onions, smoked salmon, and stuffed olives, while envelope contains sliced smoked fish. Package is a "flat oval", holding only one olive deep ▼

(Genotherm sheet film is product of Anorgana G. M. B. H. of Gendorf, Germany, represented in U.S. by David S. Greenfield, Dept. FP, 1489 Plimpton Ave., N.Y. 52, N.Y. Check FP 4317 opp. last pg.)

Research staff and laboratory equipment are necessarily the means by which packaging progress is achieved. It is felt, therefore, that an overall view of research facilities is a proper subject for the first article in this series. Those following will deal with specific properties of aluminum foil as applied to packaging.

Reynolds Metals Company operates two packaging laboratories—the Research and Development Laboratory at Richmond, Va., and a laboratory specializing in printing problems, in conjunction with Reynolds printing plant at Harrison, N. J.

The primary purpose of Reynolds Research and Development laboratory is to explore all possibilities of future developments in foil packaging and in industrial foil applications. Coincidentally, the Laboratory conducts continuing development and evaluation of all materials used in conjunction with aluminum foil—papers, adhesives, inks, coatings, waxes, hot melts, plastic films, etc.

A function of utmost importance is the technical service rendered on individual packaging problems that arise within the packager's plant. Such service provides for positive technical assistance in all fields, as it allows a trained man to work within the packager's plant, to assist in solving his problems. Such assistance is available through Reynolds regional representatives.

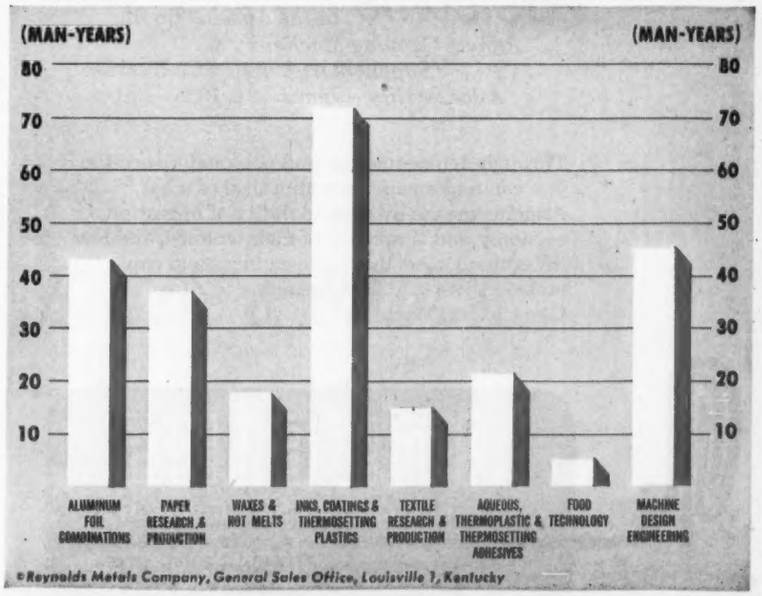
The Laboratory is not only fully equipped for testing of raw materials and new combinations; it can also duplicate practically any plant operation. Equipment includes, in addition to pilot machines:

Walk-in cabinets that can be maintained under various temperature and humidity conditions • Simplex bag-making machine • Sentinel, Seal-Craft and Doughboy heat-sealing machines • Completely equipped Home Economics Kitchen • Spectrophotometer • Photographic Rooms • Deep-Freeze Room • Vibration Machines • Atlas Fadeometer • Atmosphere Control Company moisture vapor transmission cabinets • Complete equipment for paper and foil testing.

The Research Staff at Reynolds Richmond Laboratory, consisting of 30 Technicians, represents extensive experience in all fields concerned with packaging—as summarized by the chart shown. Of the 15 key men, 10 are chemists, 3 are chemical engineers, 1 a machine engineer and 1 a food technologist. Each is a specialist in his own field. One holds a Doctor's degree and three hold Master's degrees. One of the Master's degrees is in Food Technology.

This Laboratory and its Staff have been responsible for many important developments in aluminum foil packaging. Among these are: caustic soluble beer labels, soap packages, margarine and butter packages, fiber canister labels and liners, many different heat-sealing foil laminations and semi-rigid containers. Problems currently in the course of solution for packaging customers promise further important developments.

MAN-YEARS EXPERIENCE OF 15 REYNOLDS RICHMOND LABORATORY SPECIALISTS

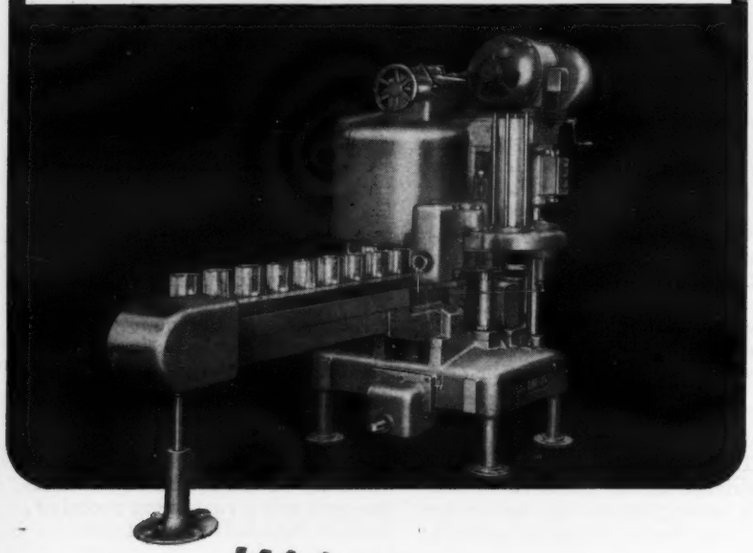


©Reynolds Metals Company, General Sales Office, Louisville 1, Kentucky

When inquiring check FP 4318 opposite last page

Swing To...

ANGELUS
CAN CLOSING MACHINES



Welcome *to the Angelus Booth*
Annual Canning Machinery & Suppliers Association Convention
Atlantic City—Jan. 19-21, 1956

Through demonstration and personal inspection you can make your own appraisal of what Angelus means by dependability of operation, economy and simplicity of maintenance, and low investment costs that have canners and can makers the world over swinging to Angelus Can Closing Machines.

ANGELUS
Sanitary Can Machine Company
Cable Address "Angelmac" Western Union Code

When inquiring check FP 4319 opposite last page

Package NEWS-OF-THE-MONTH

Tips and pointers . . . what's new in products and package design . . . and "where-to-go" for more information

No opener is needed for these Pabst quart beer cans with their "Snap-Cap" closures. A new, shallow cap on a thin, low rim can be snapped off with the rim of another can, a case knife, or other thin-edged implements — or a regular bottle opener. The top, which is double-seamed in the conventional manner, extends the cap just above the top rim of the can. The bottom of the can is convex, so that the cans can be stacked easily. Caps are neoprene-lined. First marketing started recently from the Pabst Milwaukee plant, with expansion to other markets planned as production steps up. Cans are manufactured at the Milwaukee plant of American Can Co.

This plastic slotted fitment makes non-drip bottle for the Worcestershire Sauce product of The R. T. French Co., Rochester, N.Y. When slot is held in horizontal position, product can be shaken out drop by drop (top). It will pour in a steady stream when held in the vertical position (bottom). Slotted polyethylene fitment, plastic closure, and bottle are supplied by Owens-Illinois Glass Co., Dept. FP, Toledo 1, Ohio.

Pre-baked pizza shells, two to a package, have invaded the Philadelphia area. They're being marketed by the American Baking Co. of that city in red, white, and blue printed cellophane with a transparent window. Instructions for making the pizza pies are printed on the front. Bags are printed by Bagphane Corp., Brooklyn, N.Y., on Avisco cellophane, made by American Viscose Corp., Dept. FP, 1617 Pennsylvania Blvd., Philadelphia 3, Pa.

Pre-cooked frozen fried chicken in flexible package is being used by the American Poultry & Food Co. of Gainsville, Ga., instead of the familiar frozen food cartons. Film is polyethylene-cellophane combination, lithopaque-printed in red and yellow design. Package is designed, printed, and manufactured by The Dobeckmun Co., Dept. FP, Cleveland, Ohio. Package is sealed on a Wrap-Ade machine, manufactured by Wrap-Ade Machine Co., Inc., Dept. FP, 83 Valley St., Belleville 9, N.J.

Instant bread? Well, anyway, it's a prepared mix to which only warm water and dried yeast (which comes in the package) is added. Mix, made by Spruance Company of Philadelphia, was originally intended for commercial use only . . . such as in a ship's galley . . . for baking during rough weather when regular baking was difficult. Package, a heavy-duty calendared stock bag lined with laminated glassine, is manufactured by American Bag & Paper Corp., Dept. FP, South & Water St., Philadelphia 47, Pa.

Automatically imprints, stacks anything from envelopes to 18 x 18" cartons

Quickly changed to different sizes without tools; prints on waxed, varnished surfaces

Automatic imprinter will handle anything from small envelopes to large cartons; has automatic feed, imprinting, and power-stacking; rated speed of 10,000 pieces/hour. It eliminates hand-stamping of packaging materials, and hand-affixing labels. Large, varied inventories of cartons, bags,

Automatically feeds, imprints, and stacks anything from envelopes to cartons 18 x 18" in size

and other containers can be avoided by simply carrying basic sizes, then imprinting as needed with the correct product designation, size, weight, color, style, flavor, quantity, or other variants.

Imprinter can accommodate material sizes from 2½ x 2¼" up to 18 x 18", and thicknesses from .010 to 3/16". Will imprint an area up to 4x18" in any direction, using either rubber or metal type, and can handle uncoated, varnished, or waxed surfaces. Changes of imprint can be made quickly without use of tools.

(Model 4800 carton imprinting machine is product of Pitney-Bowes, Inc., Dept. FP, Stamford, Conn. Check FP 4320 opposite last page.)

NEXT MONTH —

Easy-open vacuum meat package has slits started along edge to facilitate tearing, sufficient margin to allow reclosure

"Our printing looks better on Corabrite..."

H&D Corabrite boxes are smoother and brighter than ordinary corrugated boxes . . . yet cost no more.

Corabrite is perfect for your product. Ask us, we'll show you.

HINDE & DAUCH

Subsidiary of West Virginia Pulp and Paper Company

AUTHORITY ON PACKAGING • SANDUSKY, OHIO
13 FACTORIES • 42 SALES OFFICES

When inquiring check FP 4321 opposite last page

AUTHENTICATED · CASE HISTORY · From the Current Files of Hoerner Boxes, Inc.

Re: The Mathes Company, Fort Worth, Texas

Costs cut 27c per unit through improved packaging*

In 1953, The Mathes Company of Ft. Worth expanded their manufacturing operation from furniture, fans and coolers to refrigerated room coolers. They shipped their room coolers in 5-piece plywood boxes — costs and damage claims ran high.

Finally Mathes called in a Hoerner Packaging Engineer. He designed a corrugated box, put it through trial runs and compression tests, re-designed. In February, 1954, the Hoerner container went to work.

The Hoerner design cut 27c per unit from the cost of the shipping containers. This will save the Mathes Company $22,000 in 1955 alone. What's more, the new Hoerner container reduced shipping weight by 6¾ pounds, saving Mathes considerable freight costs — and damage claims have been practically eliminated.

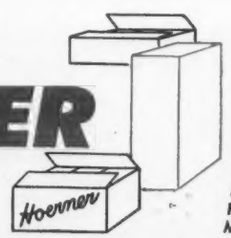
Switching from rough plywood to a printed corrugated box added attractive name identification and promotion value to The Mathes Company shipping containers.

The Hoerner Packaging Engineer responsible: H. L. Gannett

HOW A HOERNER PACKAGING ENGINEER CAN HELP YOU!

If your company packages things, whatever they are, why not ask us to have a Hoerner Packaging Engineer come in and make an objective study of your packaging operation. It won't cost you a cent or obligate you in any way. It can mean an increased margin of profit through savings in labor and material costs and prevention of shipping losses. Just write to one of the Hoerner plants listed below.

Packaging Engineers—Designers and manufacturers of corrugated boxes.



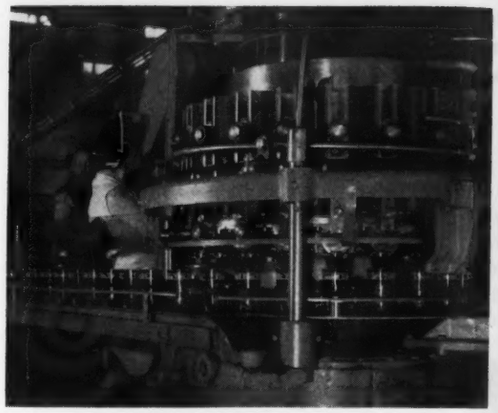
SALES OFFICES
209 S. LaSalle St., Chicago 4 • 50 E. 42nd St., New York 17
328 Park Ave., Urbana, Ohio • 2826 Main St., Kansas City, Mo.

HOERNER BOXES, INC.

GENERAL OFFICES
600 Morgan St., Keokuk, Iowa

PLANTS
Keokuk, Des Moines and Ottumwa, Iowa • Sand Springs, Oklahoma
Fort Smith and Little Rock, Arkansas • Sioux Falls, South Dakota
Minneapolis, Minnesota • Fort Worth, Texas • Mexico City, Mexico

When inquiring check FP 4322 opposite last page



Grape jelly filling operation at The Welch Grape Juice Company's Westfield, N.Y., plant

positive displacement filler used on preserves, jellies at Welch's handles up to 240 jars/min,

fills viscous products to ± 1/10 oz

High accuracy, minimum splash, and easy cleaning and maintenance are reported for positive displacement filler now used on preserve line at The Welch Grape Juice Company's Westfield, N.Y., plant. Unit was installed early in 1955, has been filling consistently to within ±1/10 oz since that time. This highly accurate fill is essential to guarantee full measure to consumer and to maintain uniform recovery in manufacturing operation.

Two products are filled with unit—grape jelly into 10 oz and 20 oz jars and whole grape preserves into 8 oz jars. Filler handles 10 oz jelly jars at 240/min, 8 oz and 20 oz jars at 180/min. Unit is activated by closing machine, thus assuring synchronization, which prevents spillage loss.

Filling independent of gravity

Filling is made independent of gravity by positive action of piston injecting exactly measured quantity of product into jar. Quantity is governed by length of piston stroke, easily adjustable by rotating small screw. The one screw adjusts all 21 stations simultaneously, even while unit is in operation. Surging and splashing are eliminated by straight slope of cam track. A no jar-no fill device is also provided.

Filler has only four primary wearing parts needing periodic replacement—all of which are inexpensive, conveniently stocked, and easily installed. Cleaning of filler is easy, since all contact surfaces

are immediately accessible after pistons and valves are removed, a job performed readily without tools. One man can perform entire clean-up operation in a few minutes. All contact parts are either stainless steel or nickel alloy. Other parts are zinc sprayed, then covered with plastic paint.

(Positive displacement filler is manufactured by the Pfaudler Co., Dept. FP, 1000 West Ave., Rochester 3, N.Y. Check FP 4323 opposite last page.)

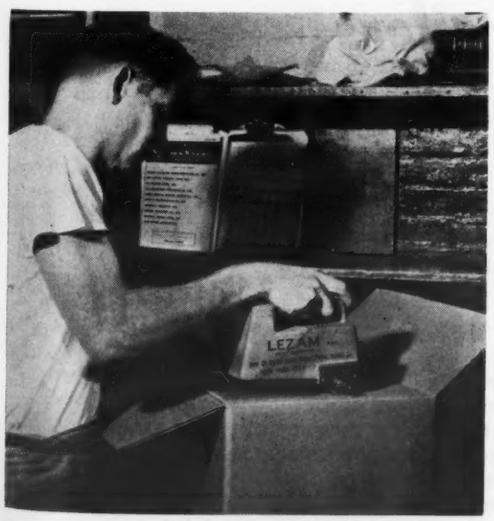
Can with no tin — welded side seam, aluminum coating used

Food can with aluminum coating instead of tin, and with welded instead of soldered side seams, made its debut at the recent annual convention of the Pennsylvania Canners Assn. This entirely tinless can, developed by the American Can Co., was described at the meeting by Dr. Randall Royce, manager of Canco's Atlantic division research labs at Newark, N. J. as "the very latest development in the search for tin-free food containers." Sideseams are described as so strong that the steel walls of the can break, under test conditions, before the seams separate.

Lightweight unit applies glue to carton flap

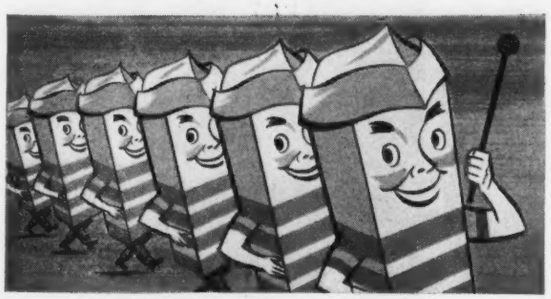
Gluer is designed to give cartons neat, safe seal using liquid glue. Unit applies even coat to any size area. Can be used on carton flaps or ungummed labels. Unit is portable, weighs only 5½ lb filled.

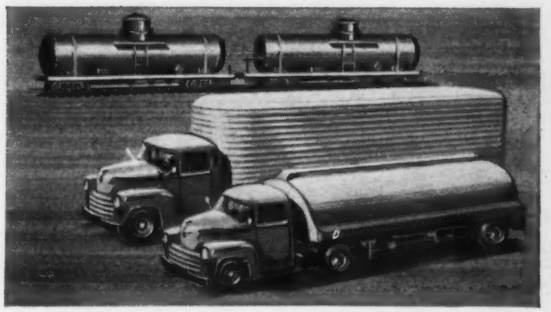
(Lezam gluer is produced by Ever-Seal Industrial Glues, Inc., Dept. FP, 520 Fifth Ave., New York 36, N.Y. Check FP 4324 opposite last page.)



Portable gluer weighs 5½ lb when filled with glue

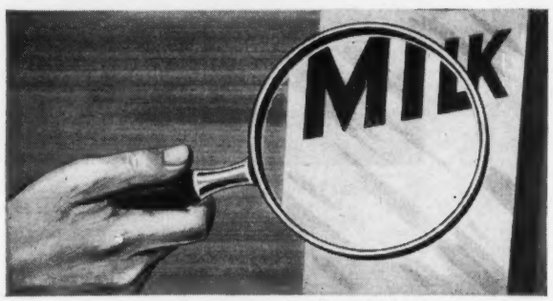
New Wax-Polyethylene Blends Greatly Improve Dairy Cartons





New Blends Contain A-C* POLYETHYLENE

Suppliers of dairy waxes are now fortifying wax with A-C POLYETHYLENE, giving the dairy industry major improvements in cartons without changes in production facilities. A-C POLYETHYLENE-wax blends are now shipped in liquid form in tank cars or trucks or in slab form. Dairy users of these pre-blended A-C POLYETHYLENE-wax combinations report many product and also production advantages.



Coating Improves Carton Strength

Reductions in bulging and number of leakers were the first advantages noted by many dairies. Cracking, chipping, flaking and rupture are all diminished when the smooth, pliant coating is applied. A-C POLYETHYLENE-wax blends offer higher tensile strength than ordinary wax coating.

Appearance Also Improved

Color and general brightness of the carton are improved. The new blends give more uniform and more homogenous coating on bottom and sides. Printing stands out, the appearance of your product is enhanced. Dairies everywhere have found that A-C POLYETHYLENE-wax blends are superior. Ask your wax supplier for this fortified wax blend today!

Production Problems Reduced

A-C POLYETHYLENE-wax blends are easy to use without changes in waxing equipment. Some users even report increased coverage per pound of wax. Containers are easier to process because of reduced wax accumulations on filler section runners. Machinery stays clean, thereby reducing maintenance.

Blends Are Ready To Use

A-C POLYETHYLENE-wax blends are available in quantity from dairy wax suppliers. Millions of dairy cartons are coated every day with A-C POLYETHYLENE-wax blends.

Ask your wax supplier about A-C POLYETHYLENE or mail in coupon for more information.

*Trade-mark

Allied Chemical

A-C* Polyethylene

SEMET-SOLVAY PETROCHEMICAL DIVISION
Allied Chemical & Dye Corporation
Room 542
40 Rector Street, New York 6, N. Y.

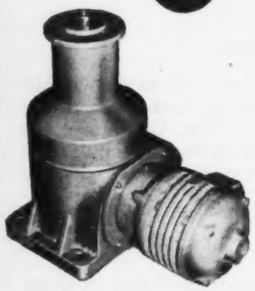
☐ Please send me literature on A-C POLYETHYLENE-wax blends.
☐ Have my local supplier furnish information on the advantages of A-C POLYETHYLENE-wax blends.

Name _____
Title _____
Company _____
Address _____
City _____ Zone ____ State _____

When inquiring check FP 4325 opposite last page

WASTING VALUABLE TIME AND EFFORT!

TIME, MAN-POWER and MONEY with an S-A CAR PULLER



One man with an SA Car Puller can spot up to 6 fully loaded box cars quickly, easily and safely. These powerful units eliminate the ineffective, slow and "back-breaking" use of pinch-bars and allow the use of tow-trucks and tractors for the duties they were designed for. An ideal, cost-saving unit for any type installation, large or small, that requires the movement of railroad cars. WRITE TODAY for BULLETIN 753.

Available with vertical or horizontal capstans. Vertical capstans will pull from any direction . . . Horizontal capstans will pull from two directions and may be used for emergency lifting.

VERTICAL CAPSTAN

HORIZONTAL CAPSTAN

IN STOCK FOR IMMEDIATE DELIVERY

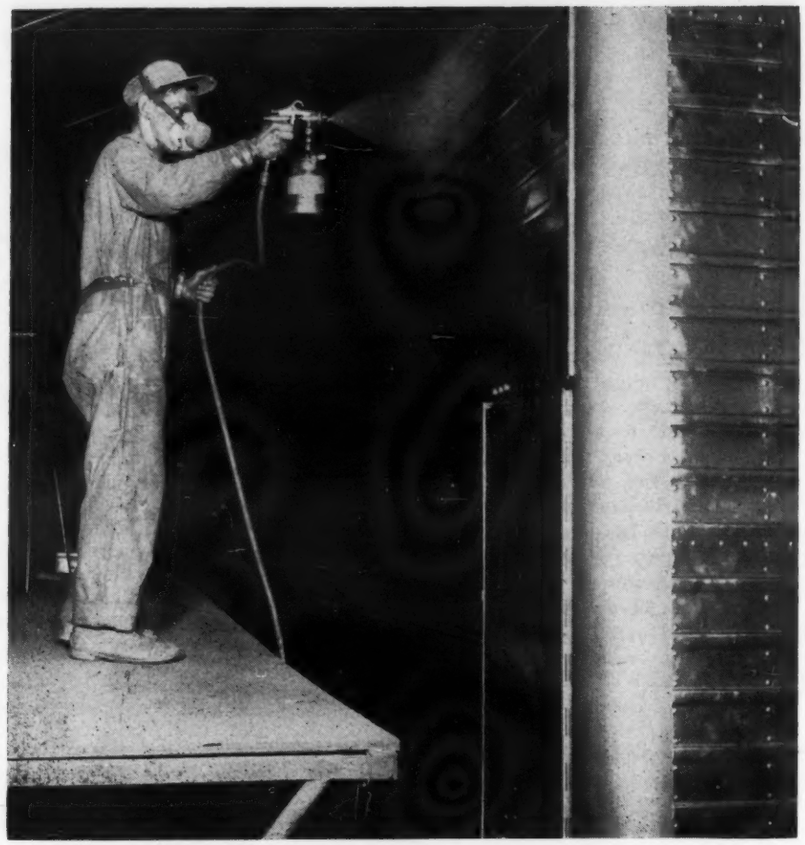
For information on the complete line of SA Standard Industrial Products write today for Bulletin 653A.

STANDARD PRODUCTS DIVISION

STEPHENS-ADAMSON MFG. CO.

17 Ridgeway Ave. Aurora, Illinois

When inquiring check FP 4326 opposite last page



Applied by regular spray, coating falls evenly over surface in skin-thin layer, drys in 10-15 minutes to satin-like finish

aluminum trailers can keep that new look

Rigorous road tests demonstrate how skin-thin lacquer coating that sprays on in 10 minutes resists corrosion and pitting. Dirt, grime wash off easily — finish is bright as ever

Protective maintenance of aluminum trailers against corrosion, pitting, and dulling is provided by a new, easily applied coating that dries in 10-15 minutes, at room temperature, to a satin finish. Effectiveness of treatment is indicated by condition of coated panels on test trailer after 16 months of regular road service (see photo).

The coating — butyrate lacquer, clear and water-white — is applied by ordinary spray methods with standard shop equipment. No priming coat is required on new aluminum, only a solvent wash to remove all traces of grease, wax, or foreign matter. On weathered aluminum, a standard phosphoric acid pre-wash is recommended.

View shows contrast between coated test panels (upper left) and remaining untreated surfaces of trailer after 16 months of service and a total of 128,000 miles. Coating shows no signs of loosening. Untreated section shows evidence of pitting, corrosion

Here is rear view of trailer after coating has been completed. This same fine finish is easily restored after hard road service by routine washing

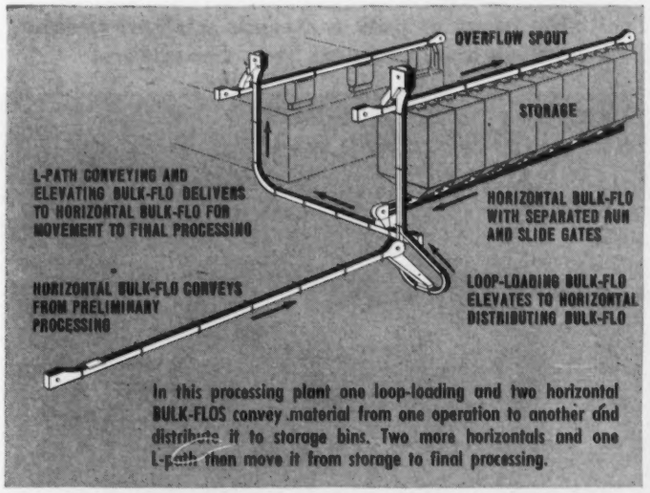
How tests were made

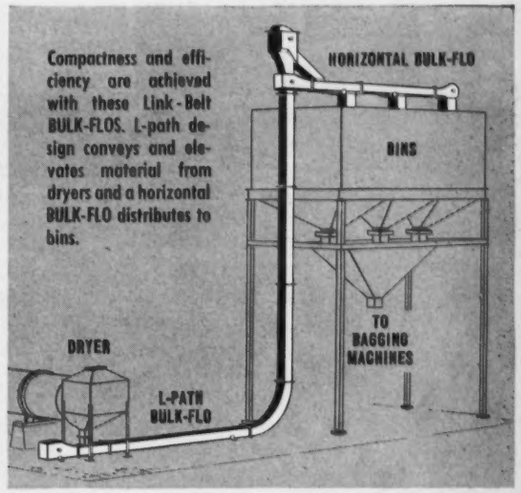
Photos show trailers built by Brown Trailers, Inc., Reading, Pa., for Mason & Dixon Lines, with headquarters in Kingsport, Tenn. For more than 16 months a number of new truck trailers were subjected to actual road tests over the routes traveled by Mason & Dixon Lines. Records were kept of all tests, particularly those on three trailers.

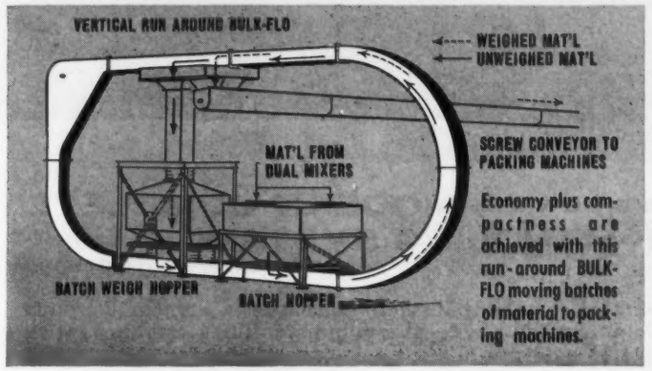
The first of these was coated about 16 months ago. Portions selected for test treatment were those noted for heavy wear during road service. This unit is used in cross-country runs, and portions sprayed with the coating are still effectively protected. However, to check advantages of completely finished trailers as against those not receiving treatment, two new trailers were taken from the lines at Brown Trailers. One was coated with the lacquer, the other left untreated

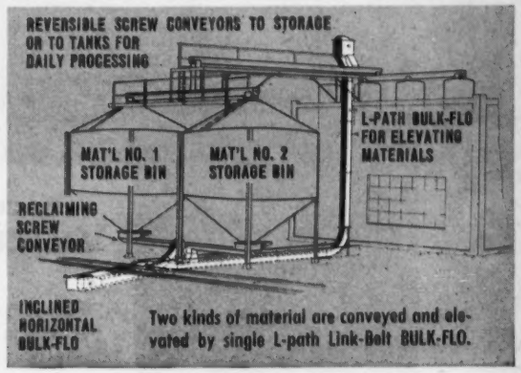
(*Continued on next page*)

Here's how BULK-FLO units can feed-convey-elevate your materials


OVERFLOW SPOUT
STORAGE
L-PATH CONVEYING AND ELEVATING BULK-FLO DELIVERS TO HORIZONTAL BULK-FLO FOR MOVEMENT TO FINAL PROCESSING
HORIZONTAL BULK-FLO WITH SEPARATED RUN AND SLIDE GATES
HORIZONTAL BULK-FLO CONVEYS FROM PRELIMINARY PROCESSING
LOOP-LOADING BULK-FLO ELEVATES TO HORIZONTAL DISTRIBUTING BULK-FLO
In this processing plant one loop-loading and two horizontal BULK-FLOS convey material from one operation to another and distribute it to storage bins. Two more horizontals and one L-path then move it from storage to final processing.

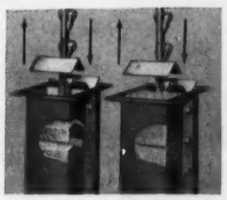

Compactness and efficiency are achieved with these Link-Belt BULK-FLOS. L-path design conveys and elevates material from dryers and a horizontal BULK-FLO distributes to bins.
HORIZONTAL BULK-FLO
BINS
TO BAGGING MACHINES
DRYER
L-PATH BULK-FLO


VERTICAL RUN AROUND BULK-FLO
WEIGHED MAT'L
UNWEIGHED MAT'L
MAT'L FROM DUAL MIXERS
SCREW CONVEYOR TO PACKING MACHINES
Economy plus compactness are achieved with this run-around BULK-FLO moving batches of material to packing machines.
BATCH WEIGH HOPPER
BATCH HOPPER


REVERSIBLE SCREW CONVEYORS TO STORAGE OR TO TANKS FOR DAILY PROCESSING
L-PATH BULK-FLO FOR ELEVATING MATERIALS
MAT'L NO. 1 STORAGE BIN
MAT'L NO. 2 STORAGE BIN
RECLAIMING SCREW CONVEYOR
INCLINED HORIZONTAL BULK-FLO
Two kinds of material are conveyed and elevated by single L-path Link-Belt BULK-FLO.

Single, compact, enclosed assembly . . . operates fully or partially loaded

SHOWN above are four of many handling variations possible with Link-Belt BULK-FLO. This single assembly moves materials along horizontal, vertical and inclined paths . . . combines feeding, conveying, elevating. Flexible, compact and sanitary—BULK-FLO often replaces several handling units—in less space . . . at lower cost. Get complete information from your nearby Link-Belt office or send coupon for your copy of Book 2475 today.



FULL OR PARTIALLY LOADED—Link-Belt BULK-FLO assures positive, gentle movement of material. Self-clearing through intermediate runs, it prevents contamination.

LINK-BELT

BULK-FLO FEEDERS • CONVEYORS • ELEVATORS

LINK-BELT COMPANY: Executive Offices, 307 N. Michigan Ave., Chicago 1. To Serve Industry There Are Link-Belt Plants and Sales Offices in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World. 13,670

LINK-BELT COMPANY
307 N. Michigan Ave.
Chicago 1, Ill.
(Or your nearest Link-Belt office)

Please send me a copy of your 28-page BULK-FLO Book 2475.

Name .....
Firm .....
Address .....
City ..... Zone .... State .....

When inquiring check FP 4327 opposite last page

another great advance in economy for BULK MATERIAL shippers!

TOTE* SYSTEM now offers the NEW, TESTED Container Car

Permits rail shipments of bulk materials without freight costs on forwarding and return of Tote Containers.

This car was recently introduced by Shippers Car Line Corporation of New York City and Tote System, Inc. Twenty-eight Tote containers are securely shored in place on the car. Upon arrival at destination, the shoring bars swing easily out of place for unloading. One man can completely unload the car in 35 minutes using a battery powered walkie-type lift truck.

here's how this MODERN COMPLETE BULK HANDLING SYSTEM saves you money!

Tote System is a **complete** bulk material handling system built around sturdy aluminum containers, plus automatic filling and discharging equipment. It is now being used by hundreds of manufacturers and processors for inter-plant shipment of bulk materials; for in-plant storage and handling; and for accurate and automatic weighing, mixing and blending.

Tote System SAVES time and labor . . . container costs . . . losses due to contamination and deterioration . . . losses due to breakage, spillage and sifting . . . losses due to rodents, insects and weather. Tote System also SAVES investment in expensive fixed storage and conveying equipment. Its flexibility and adaptability to changes in plant layout are unmatched.

LOAD IT

TRANSPORT IT

DISCHARGE IT

and now, with the new CONTAINER CAR

It is possible to make long haul shipments of bulk materials in unit containers without any freight costs on the containers themselves . . . to make mixed or split shipments of various bulk materials . . . to simplify shipments to off-rail users.

Tote System engineers are available to help you fit these developments to your specific application. Write at once without obligation.

*Tote and Tote System Reg. U. S. Pat. Off.

TOTE SYSTEM, incorporated

850 So. 7th Beatrice, Nebraska

When inquiring check FP 4328 opposite last page

Aluminum Coating

(*Continued from preceding page*)

as a "control". Both were sent out for 60 days, during which they covered about 10,000 miles before being brought in for inspection.

Early signs of deterioration were already apparent on the untreated trailer. The coated trailer retained the characteristic satiny, unmarked finish that the lacquer imparts. When both trailers were washed, using only a water hose, it was apparent that dirt and road grime were released more readily from the treated trailer than the uncoated one. It took one-third less time and less effort, on part of wash-down crew, to clean the treated trailer, which might have passed inspection with no further cleaning. However, as each trailer was to receive identical treatment during the tests, a brush was then used on both. No brightener was used on either.

Results showed that the uncoated trailer will have to be treated with a heavy-duty corrosion remover and brightener every three months at a cost of 4 to $5 for labor and material.

(Clear Coating CH64 is a cooperative development of Eastman Chemical Products, Inc., Dept. FP, 260 Madison Ave., New York 16, N. Y., and Egyptian Lacquer Mfg. Co., Dept. FP, Kearney, N. J. . . . or for more information check FP 4329 on form opposite last page.)

Belt's greater resistance to oil imparted by nitrile cover

Non-swelling characteristic demonstrated by test immersion in walnut oil

Uses: In processing plants and feed mills. Suitable for handling potato chips, peanuts, cotton seed, doughnuts, and various fried foods.

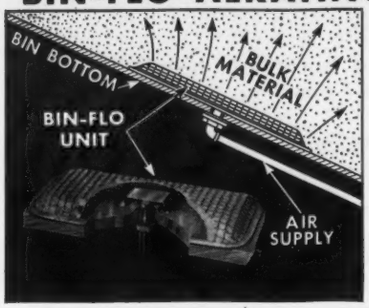
Features: Nitrile synthetic rubber cover is designed to resist swelling under prolonged exposure to oils and difficult operating conditions.

Performance: In laboratory tests, nitrile cover was compared with two others by subjecting all three to immersion in walnut oil. After six weeks immersion at room temperature, nitrile cover had not swollen, second showed swell of about 38%, third 74%.

Description: Belt is made with smooth top for horizontal haulage or rough top for operation at inclined angle. Light tan cover is easy to keep clean.

(Oil-resistant belting is available from Hewitt-Robins Inc., Dept. FP, Stamford, Conn. . . . or for more information check FP 4330 on form opposite last page.)

BIN-FLO AERATING UNIT

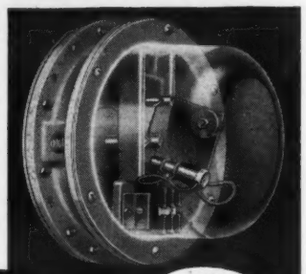


Provides Steady Flow of Dry, Finely Ground Materials which tend to bridge in storage. Uses only small amount low-pressure air.

BIN-DICATOR BIN LEVEL INDICATOR

For All Bulk Materials

signals change in level; automatically starts and stops filling and emptying equipment.



THE BIN-DICATOR CO.
13946-C Kercheval • Detroit 15, Mich.

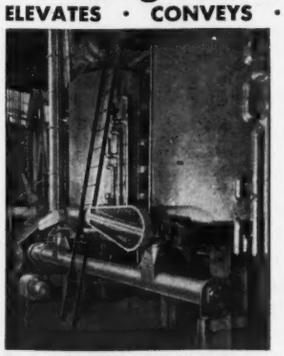
NEW DETAIL DATA BOOK FREE

When inquiring check FP 4331 opposite last page

A HAMMOND Screw-Lift Screw-Veyor

System – gives You AUTOMATION in Handling Bulk Materials

ELEVATES · CONVEYS · DISTRIBUTES · RECYCLES · RECLAIMS without attention



One of thousands of installations, the view above shows Screw-Lift, Screw-Veyor collecting cooked, cracked soy beans from vats — elevating and transferring to cross conveyor — feeding into flaking mills. Works automatically. Fully accessible. Sanitary.

Flow coordinated with speed of processing

•

Capacity from a trickle to 3000 cu. ft. per hour

•

Efficient • Clean Quiet, Smooth Frictionless Flow. Non-Clogging . . . . . No Degradation . . . . Totally enclosed Requires a minimum of valuable floor space. Units are factory pre-assembled making erection simple and rapid.

•

6 Types — 4 Sizes . . . Made to suit your layout.

Write for Bulletins M-500-2 — M-600-2

Screw Conveyor Corporation
701 HOFFMAN STREET • HAMMOND, INDIANA
WINONA, MISSISSIPPI SANTA CLARA, CALIFORNIA
HAMMOND PRODUCTS

When inquiring check FP 4332 opposite last page

Shows cutaway views of hose couplings

Revised catalog on quick-connect-disconnect hose couplings features page-size cutaway views which reveal design and construction. They help to explain how these couplings provide: 1) a unique sealing action which makes the coupling tighter as internal pressure is increased, thereby insuring freedom from leakage, even at high pressures; 2) a full swiveling action that prevents hose twisting and kinking, thereby extending hose life.

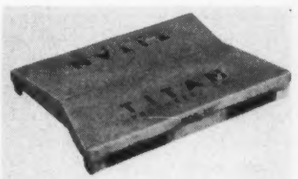
Single- and double-check valve modifications of the coupling are also illustrated and described, as well as coupling accessories.

Cat on quick-seal coupling is issued by Titeflex, Inc., Dept. FP, 10 Hendee St., Springfield 4, Mass. When inquiring specify FP 4333 on form opposite last page.

"No-return" paper pallets cut handling costs

Assembled quickly — will hold loads up to 2000 lb

Uses: For in-plant handling, storage, as well as rail and highway shipment.



Paper pallet can be assembled in half-minute

Features: Expendable design. All return costs eliminated. Delivered "knocked-down", pallets require only 25% of usual storage space for conventional types. Paper used in construction provides high sanitation factor. No

(*Continued on page* 76)

WELL-BEHAVED BOXES...

Gaylord Boxes

CORRUGATED AND SOLID FIBRE BOXES
FOLDING CARTONS • KRAFT PAPER AND SPECIALTIES
KRAFT BAGS AND SACKS

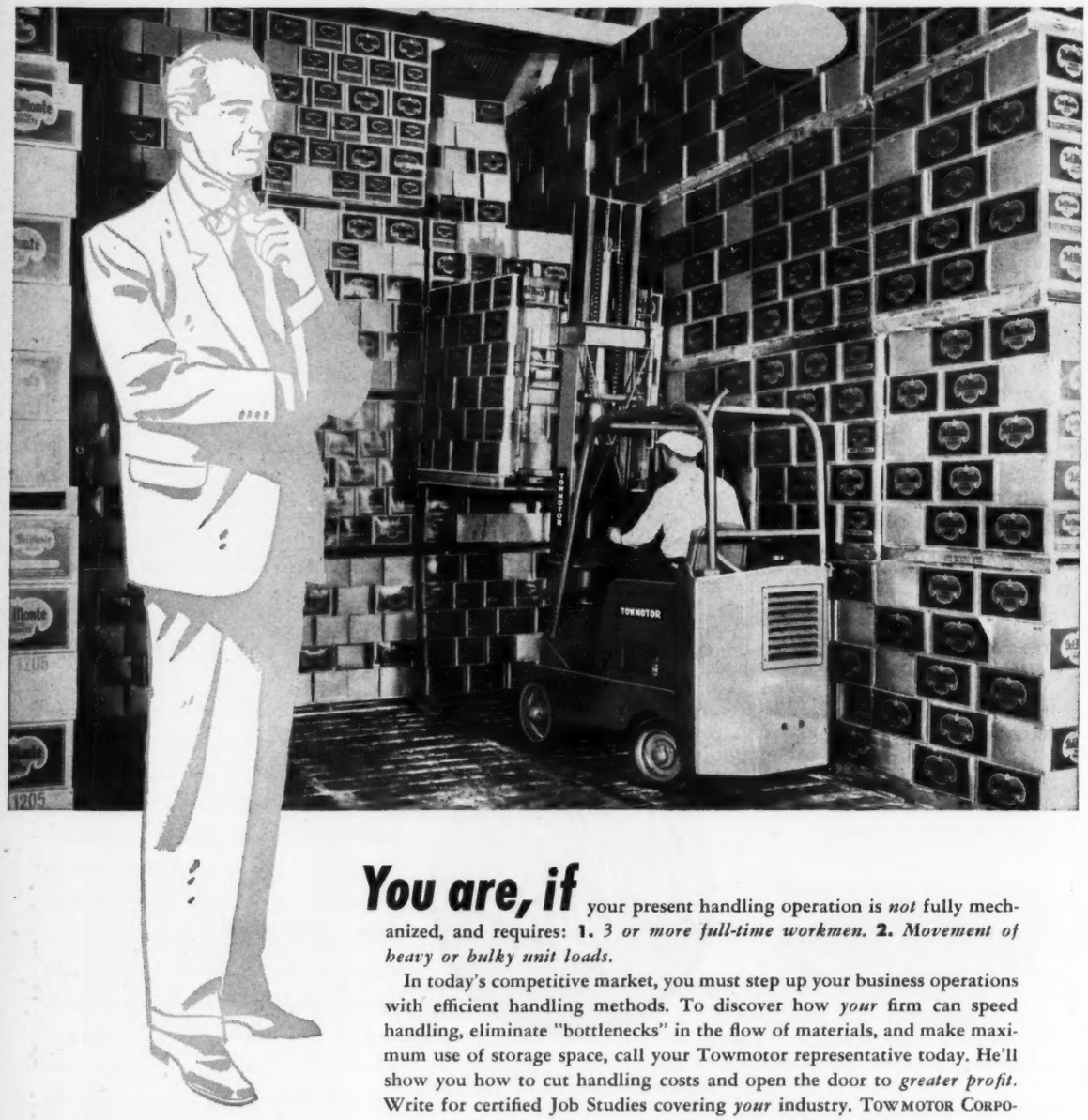
...are vital to modern, mechanized handling methods. As operations become more automatic, interruptions are more costly. Precision-built Gaylord containers are dimensionally accurate and structurally strong to speed packing and handling... prevent jam-ups.

Gaylord container specialists will be glad to work with you in selecting or developing "well-behaved boxes"... for maximum manpower-saving efficiency. Call your nearby Gaylord office.

GAYLORD CONTAINER CORPORATION • ST. LOUIS
DIVISION OF CROWN ZELLERBACH CORPORATION

When inquiring check FP 4334 opposite last page

Am I ready for a Towmotor?



You are, if your present handling operation is *not* fully mechanized, and requires: **1.** *3 or more full-time workmen.* **2.** *Movement of heavy or bulky unit loads.*

In today's competitive market, you must step up your business operations with efficient handling methods. To discover how *your* firm can speed handling, eliminate "bottlenecks" in the flow of materials, and make maximum use of storage space, call your Towmotor representative today. He'll show you how to cut handling costs and open the door to *greater profit.* Write for certified Job Studies covering *your* industry. TOWMOTOR CORPORATION, Div. 4401, 1226 E. 152nd St., Cleveland 10, Ohio.

Read how a Canned Food Warehouse Cuts Handling Costs with Towmotor Fork Lift Trucks. Ask for Job Study #105

America's ***best engineered*** *fork lift truck*

TOWMOTOR
THE ONE-MAN-GANG ®

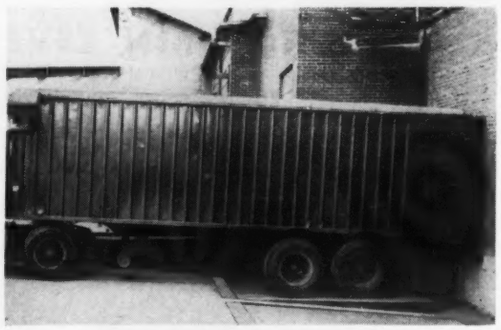
THERE'S ONLY ONE FORK LIFT TRUCK CALLED TOWMOTOR

When inquiring check FP 4335 opposite last page

Trucks raised, lowered hydraulically to speed load handling

Push-button-operated, 40,000 lb capacity

A truck leveling device designed to save dock space is especially suitable for service where conventional leveling units are difficult to install. Ramps or dockboards are not required. The device utilizes existing pavement area and eliminates need for expensive alterations.



Device equalizes truck level with dock

Standard models have capacity of 40,000 lb and measure 12′ in length with a choice of either 9 or 10′ widths. The leveler can be raised or lowered with vehicle on platform, or trucks can be driven onto it without prior adjustment. Positioning is accomplished in a few seconds by push button control.

(Adjust-A-Truck is built by Rowe Methods, Inc., Dept. FP, 2534 Detroit Ave., Cleveland, Ohio . . . or check FP 4336 opposite last page.)

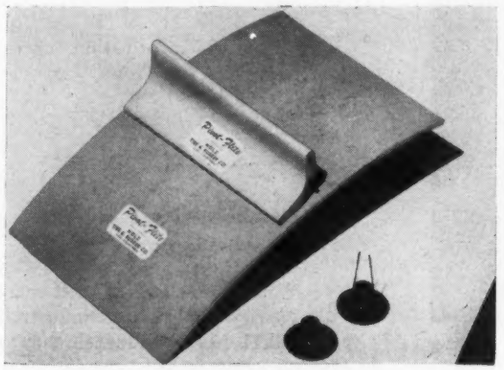
It's not that cold in here, man — your belt's just caught on the vibrator!

Rubber cleats quickly attached while belt is on conveyor

Molded rubber rivets eliminate damage caused by metal bolts

Easily attached to any belt by molded rubber rivets, a new type of cleat facilitates conveying loads up inclines. Installation on either old or new belts does not involve removal of belt.

First step is to punch holes in belt, using printed adhesive-backed template furnished with each cleat. Molded rubber rivets are then dunked in adhesive and pulled through holes with pliers.



Cleats are easily attached using template, fasteners, and stainless hinge pin

Molded shoulders hold rivets in place and seal moisture out of belt plies. Cleat is then attached to rivets with stainless steel hinge pin.

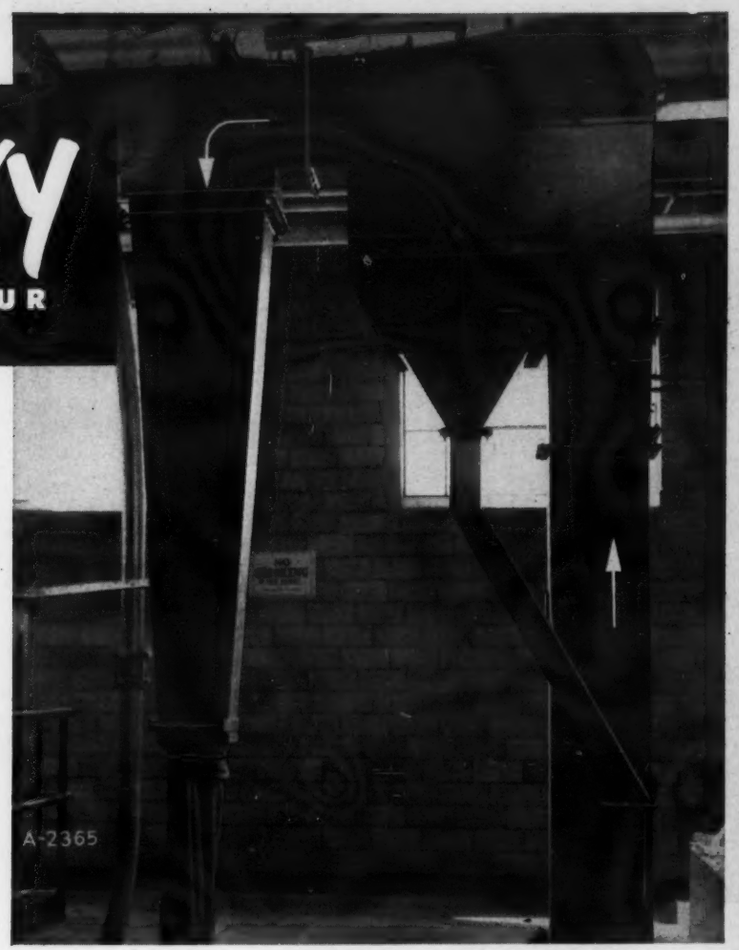
Pivoted attachment and use of molded rubber rivets eliminate any stiffening at base of cleat. Belt encounters no strain in passing over head and tail pulleys. There are no metal bolts or rivets to work out or to tear the belt. In case of severe mechanical hang-up, rubber rivets pull out without damaging belt and are easily replaced. Cleats can be transferred to new belt, if desired. All parts are exposed for washing or steam cleaning. Resilient rubber construction prevents bruising of fruit and vegetables and protects fragile loads.

Standard cleats are available in 1¼ x 1¼" or 2½ x 2½" section dimensions in lengths to fit any belt width. Special can and carton cleats and weld-on adaptors to attach cleats to potato chains are also available.

(Pivot-Flite Cleats are made by Holz Tire & Rubber Co., Dept. FP, P. O. Box 618, Lodi, Calif. . . . or for more information check FP 4337 on convenient Reader Service slip which is located opposite last page.)

Pillsbury

MIXES CAKE FLOUR BY THE TON



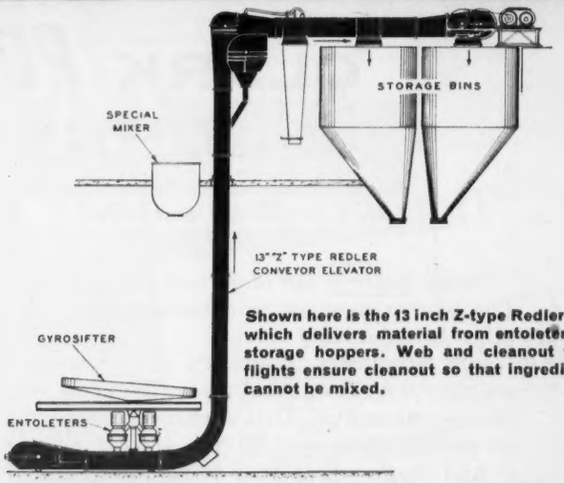
S-A Conveyors and a small crew produce tons of flour mix in a million dollar plant!

Big reasons for the efficiency and reduced manpower in this Springfield, Illinois Plant of Pillsbury Mills, Inc. are the Stephens-Adamson Redler conveyor units. These conveyors receive flour, sugar, and other dry ingredients from surge bins, delivering them to sifting and mixing stations. The finished mix is then discharged to either of two Redlers which convey to packing machines. A third, Z-type Redler, elevates dry ingredients from a gyrosifter and entoleters to storage bins.

The S-A Redler enclosed casing design eliminates contamination possibilities as well as dusting problems.

Meeting and solving materials handling problems for the huge food processing industry is a frequent accomplishment of S-A engineers. Let them examine your requirements. There is no obligation.

Twin side pull Redlers deliver mix to packers. Sealed casings prevent contamination, eliminate dusting. All feed and discharge points are automatically controlled with air operated slide gates.



Shown here is the 13 inch Z-type Redler unit which delivers material from entoleters to storage hoppers. Web and cleanout type flights ensure cleanout so that ingredients cannot be mixed.

STEPHENS-ADAMSON MFG. CO.

17 Ridgeway Avenue, Aurora, Ill.—Los Angeles, Calif.—Belleville, Ontario

ENGINEERING DIVISION
Designers and manufacturers of all types of bulk materials conveying systems.

STANDARD PRODUCTS DIVISION
A complete line of conveyor accessories—centrifugal loaders—car pullers—bin level controls, etc.

SEALMASTER DIVISION
A full line of industrial ball bearing units available in both standard and special housings.

When inquiring check FP 4338 opposite last page

(*Continued from page 73*)

maintenance is involved, and initial cost of each pallet is partially recovered through paper salvage.

Description: Pallet weight is about 4 lb. It is at present available in 32 x 40" and 40 x 48" sizes, with two-way entry for truck forks. As they are required, pallets are easily folded and wire-stitched or stapled. Each pallet can be loaded to support 2000 lb, and stacking up to four high does not endanger base pallet.

(Titan pallets are available from Titan Products Co., Dept. FP, 165 E. 74th St., New York 21, N. Y. . . . or for more information check FP 4339 on form opposite last page.)

"Self-energizing" wheel rolls, swivels easily

What is called a "self-energizing" rubber-tired industrial wheel has been developed to provide greater capacity for supporting heavy loads and roll and swivel with ease.

The new design utilizes a molded rubber tread, bonded vertically between two steel discs. By compressing the two discs, a displaced and inflated tread is produced. Rolling resistance is reduced substantially by compressing the side discs to which the rubber is bonded, causing the rubber to be displaced outward under pressure. This action allows tread to resist flattening.

("Self-energizing" wheels are a development of Roll Rite Corp., Dept. FP, 801 Jefferson St., Oakland 7, Calif. . . . or for more information check FP 4340 opposite last page.)

For more information on product at left, specify FP 4341 . . . see information request blank opposite last page.

One reason Johnson's Wax specified Clark is the dependable local service offered by Wisconsin Industrial Truck Co., Milwaukee. It's typical of *all* Clark dealers. It's smart business to do business—locally.

CLARK *POWRWORKER*® at JOHNSON'S WAX

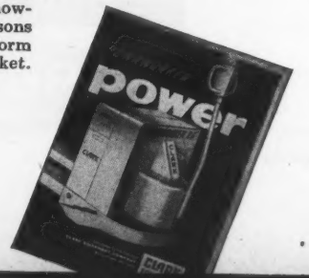
"It takes more than features . . ."

Truck features are important. Fact is the Powrworker gives you more features than any other powered hand truck.

BUT PERFORMANCE DOESN'T *JUST* DEPEND ON FEATURES. How about a year from now, or two years, or five? That's when you depend on service—fast, local service.

And that's where your local Clark dealer comes in. Clark dealers have the largest supply of service parts in the industry—genuine Clark parts that are warranted and guaranteed for quality. He has factory trained men who *know* your machines. He provides prompt mobile service for emergencies, preventative maintenance right in your own plant, a completely equipped shop for rebuilding, and a fleet of rental trucks to help you over peak work loads. Here, is a *complete* service package.

SEE THE BONUS FEATURES of the Powrworker. Send for your copy of the new 16 page Powrworker booklet showing full details, cut-away views, reasons why the Powrworker will outperform any competitive machine on the market.



DON'T MISS THE MATERIAL HANDLING SHOW, JUNE 5-8, CLEVELAND, OHIO!

CLARK® EQUIPMENT

POWRWORKER SECTION, Industrial Truck Division

CLARK EQUIPMENT COMPANY

BATTLE CREEK 15, MICHIGAN

BRIEFS from contemporary publications

Here's a quick look at articles appearing in other technical and business magazines

Spices have antioxidant values for emulsified fats

Tests by the active oxygen method show that many spices have considerable antioxidant value in protecting emulsified fats. The relative effectiveness of individual spices is quite different for emulsions from that for unemulsified lard. 6 pages, 2 tables, 1 graph. (*"Food Research", October* 1955, *page* 443)

Cushioning materials for packing

Several materials with widely differing characteristics are available to cushion sensitive objects (such as glass jars and bottles) against impact damage. A general discussion of cushioning theory is followed by a list of cushioning materials, their method of manufacture, and their outstanding properties. 3 pages, 2 photos. (*"Glass Packer", November,* 1955, *page* 30)

Fortification of foods with vitamin B_{12}

To guide processors considering fortification of foods with vitamin B_{12}, information is presented on properties of the vitamin, assay methods, typical analytical values for various foods, and stability findings in various foods. 8 pages, 6 tables. (*"Transactions, American Association of Cereal Chemists", October* 1955, *page* 233)

New device for measuring odor

An improved Elsberg olfactometer has been built by a food manufacturer for use with an odor panel. Use of only selected subjects holds down variation and improves sensitivity in the tests. Details are given on the construction of the apparatus and technique for using it. 9 pages, 4 photos, 3 tables, 2 graphs. (*"Modern Packaging", November* 1955, *page* 149)

Get most value from pig skins

Scientific study of hog scalding and dehairing has shown proper conditions to get best leather value from pig skins. The work suggests the possibility of a broader market and better price for the consistently good quality product made by these procedures. 3 pages, 4 photos, 1 diagram, 1 table. (*"National Provisioner," October* 22, 1955, *page* 12)

Frozen food quality varies with small storage temp differences

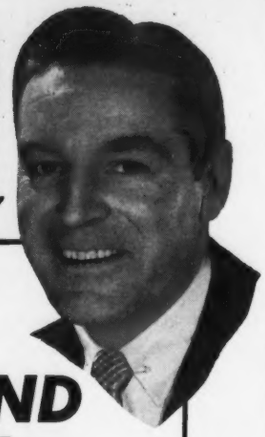
Frozen green beans and frozen strawberries showed differences in quality after 10 months when there was only 3°F difference in storage temperature. Studies were made every 3° from −3° to 12°, measuring ascorbic acid, color, flavor, bacteria count. 6 pages, 5 graphs, 4 tables. (*"Refrigerating Engineering", November* 1955, *page* 52)

Principles of efficient inventory control

Tables and formulas give a simple but systematic way to determine when and how much to order to maintain an inventory on an item most efficiently. 3 pages, 3 tables, 3 graphs. (*"Modern Materials Handling," October* 1955, *p.* 111)

Pressure Kettle Two-thirds Jacketed 40 to 200 gal.
Style CW Kettle Two-thirds Jacketed 80 to 300 gal.
Style A3T Center-line Scraper Agitator Kettle 25 to 300 gal.
REDUCE YOUR PROCESSING COSTS WITH
LEE EQUIPMENT
✓ CORROSION-RESISTANT
Built from time-proved stainless steel
✓ WIDE RANGE OF SIZES
To fit your exact requirements
✓ INDIVIDUALLY DESIGNED
To meet your specific processing operation
✓ PRECISION-BUILT
To give you long years of peak performance
✓ LOW MAINTENANCE
Easy to clean and keep clean
Our technical bulletins describe this equipment in detail.
Write for them today!
Style A Kettle Two-thirds Jacketed 5 to 500 gal.
Style C Kettle Two-thirds Jacketed 5 to 100 gal.
Style B Kettle Full Jacketed 10 to 300 gal.
Style CW3T Center-Line Scraper Agitator Kettle 80 to 300 gal.
LEE METAL PRODUCTS CO., Inc.
414 Pine Street, Philipsburg, Pa.
ALL LEE KETTLES ARE MADE TO A.S.M.E. CODE
Vacuum Pan 50 to 500 gal.
Mixing Tank 25 to 500 gal.
Pulp Tank 500 to 2,000 gal.
Quick Cooling Pan 50 to 200 gal.
Storage Tank 100 to 5,000 gal.
When inquiring check FP 4342 opposite last page

what is your
PULVERIZING
problem?



accept this offer by Schutz-O'Neill for a

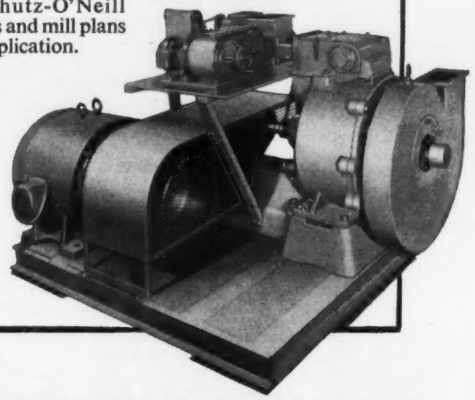
FREE TEST GRIND

OF YOUR MATERIAL SAMPLE

Without obligation to you, we'll grind a sample of your material in our Pilot plant, using a production model Schutz-O'Neill Superfine Pulverizer. This is a bonafide, no-strings offer to demonstrate to you the versatility, particle size range and capacity of Schutz-O'Neill Pulverizers. Write us for details.

OUR ENGINEERING TEST REPORT together with your processed product will be returned to you giving exact data and recommended Schutz-O'Neill equipment, methods and mill plans for your process application.

SCHUTZ-O'NEILL PILOT PLANT uses a standard production model 16″ Superfine Pulverizer, which provides up to 100 different pulverizing set-ups with a grinding range from 40 mesh to 5 microns.



ULTRAFINE GRINDING WITH CONTROLLED PARTICLE SIZE RANGE

WRITE US FOR DETAILS OF TEST GRIND OFFER

You'll find Schutz-O'Neill Superfine Pulverizers best for ultrafine grinding with controlled particle size distribution—yet their versatility also makes them adaptable to the complete grinding range from coarse to ultrafine.

Many heat sensitive products can be safely pulverized, because the grinding principle of impact with air attrition embodied in Schutz-O'Neill design keeps product temperatures down and helps control uniformity.

Typical Schutz-O'Neill applications are in the paint industry; major cocoa powder, sugar, spice and pharmaceutical manufacturers; processors of emulsifier gums, resin, plastic and seaweed extract powders and a great number of others. From 62 years of continuous manufacturing and field experience, Schutz-O'Neill may already have the answer to your problem. Superfine Pulverizers are made in six sizes ranging from 7½ to 125 horsepower with grinding chambers 12″ to 28″ in diameter.

Tell us your milling requirement—fineness, uniformity, increased output, lower cost—send us a sample of the stock you want to pulverize, state fineness and capacity desired, or send for Schutz-O'Neill bulletin.

ESTABLISHED 1893

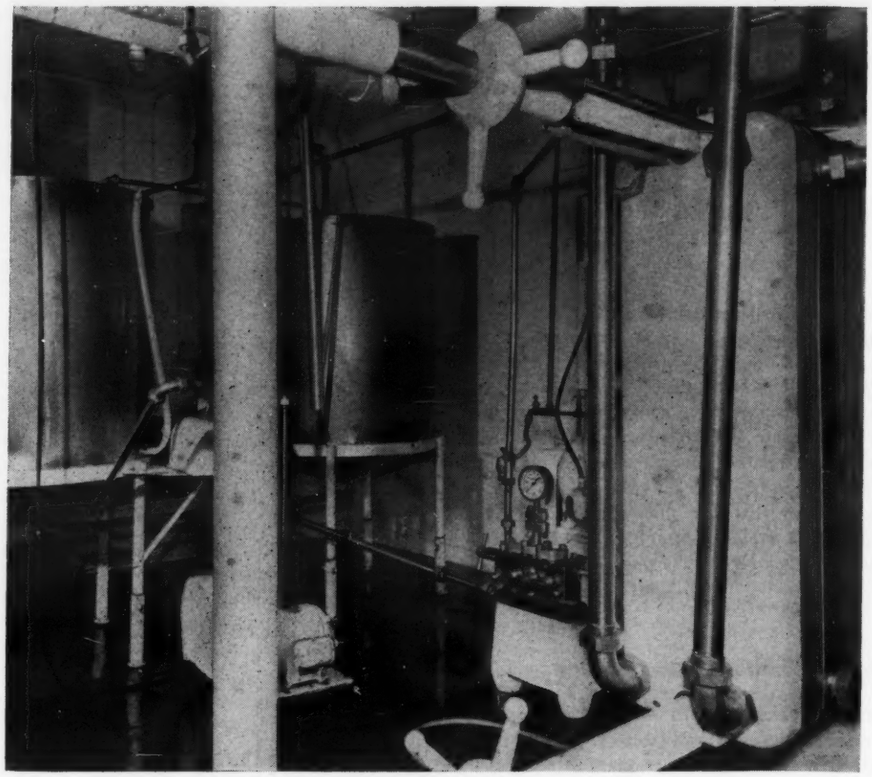
SCHUTZ-O'NEILL COMPANY

341 Portland Avenue • Minneapolis 15, Minnesota

PULVERIZERS
GRANULATORS
ROLLER MILLS
AIR CLASSIFIERS
SIFTERS
HAMMERMILLS

When inquiring check FP 4343 opposite last page

processing equipment



With aid of equipment designed for dairy use, Cal-Tex Citrus Juice Co. has

quadrupled orange juice production

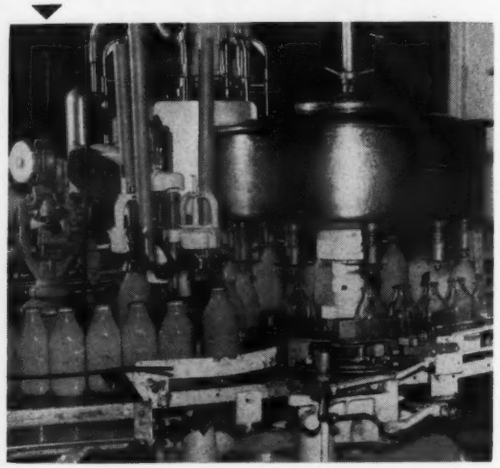
GORDON VAN LIEW, Manager
Cal-Tex Citrus Juice Co.
as reported by **FP Staff**

Conventional dairy handling equipment —homogenizer, pasteurizing heat exchanger, bottle and carton fillers—has helped Cal-Tex Citrus Juice Co. in Houston to keep up with demand for its fresh refrigerated orange juice. Each of the three years the company has been in business, production figures have doubled. Current production is 4000 gal/day, with 10,000 gal/day anticipated in five years.

First step in processing is grading oranges received from the orchards. Swollen or over-ripe fruit is discarded. Oranges then pass through chlorine rinse, followed by fresh water rinse. Juice is then extracted, and heavy pulp and seeds removed in finisher. Next stage is blending tank, where consistency, pH, and sugar content are adjusted to proper point.

◀ Homogenizer and pasteurizing heat exchanger at right of photo illustrate how Cal-Tex uses dairy handling equipment in processing orange juice

Conventional dairy bottle filler is applied to juice. Paper cartons are also filled with dairy equipment ▼



Dairy handling equipment then enters the processing, as juice passes through a homogenizer at approximately 2500 psi. This operation serves to prevent settling of the juice, provides greater digestibility. To prolong storage life, juice is then flash-heated to 180°F in a plate heat exchanger. Immediate cooling to 34° in sweet water plate system retains vitamin content.

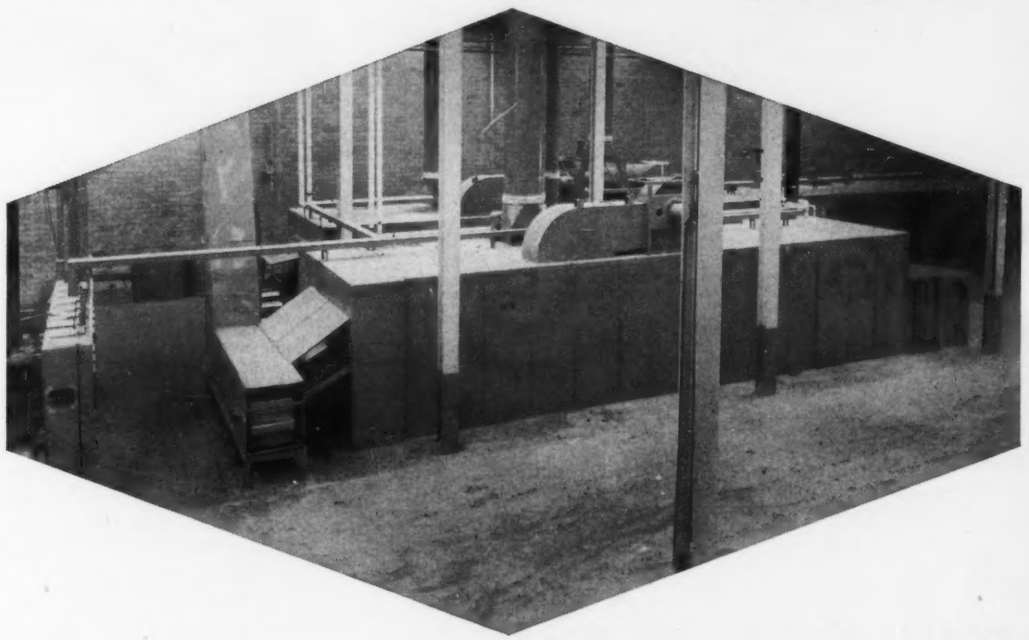
Juice is filled automatically into either glass milk bottles or paper cartons bearing Cal-Tex's Vita-Pakt label. Juice is then stored at 40° to await shipping. Delivery trucks are maintained at same temperature. Time elapsed between receiving fruit and delivery of juice to dairies throughout trade area is less than 24 hours.

Mid-nation location enables company to process oranges from California, Florida, and Texas, making the working season as long as possible—presently extending from April through October. Distribution is done through local dairies, has expanded to include all of Texas and Louisiana, part of Oklahoma.

(Dairy handling equipment was supplied by Cherry-Burrell Corp., Dept. FP, 427 W. Randolph St., Chicago 6, Ill. . . . or for more information check FP 4344 opposite last page.)

A Proctor

DRYING RANGE means a PROFIT!



Efficient drying per pound of product can often *mean more direct profit to you* than an increased sales volume! Proctor equipment provides the control, flexibility, and construction features *essential* to profitable drying performance. The result—increased yield of highest quality product. Write or phone *today* for complete information.

Product Uniformity is of utmost importance to every food processor, at all stages of processing.

Shown above is one of many Proctor & Schwartz dryer installations in one of the country's larger food plants—typical of the many in use in the food industry today. Here, because of Proctor drying skills, uniformity of color, taste, and overall customer appeal is maintained at uniformly highest levels—yields are greatly increased!

★ HIGHEST PRODUCT UNIFORMITY
★ INCREASED YIELD
★ GUARANTEED PRODUCT QUALITY
★ "W/M" CONSTRUCTION
★ FLEXIBILITY OF OPERATION

PROCTOR DRYING EQUIPMENT FOR THE FOOD AND PROCESS INDUSTRIES

• Tray Dryers • Truck Dryers • Pre-Forming Feeds
• Continuous Conveyor Dryers • Spray Dryers

Proctor

PROCTOR & SCHWARTZ, Inc.

Manufacturers of Industrial Drying Equipment and Textile Machinery. Philadelphia 20, Pa.

When inquiring check FP 4345 opposite last page

GRIT-FREE PRE-PACKAGING

WITH *Cambridge* WIRE MESH CONVEYOR BELTS

Regardless of what vegetable or fruit you're pre-packaging, canning or freezing, you'll get a more attractive, uniformly clean product by tank and spray washing on continuously moving wire mesh belts. Open mesh permits forced rinsing of dirt and grit, rapid drainage and free circulation of air for drying. All-metal belts speed production by carrying stock continuously through cutting and inspection. Write for this detailed discussion of how Cambridge Wire Mesh Conveyor Belts can speed production by minimizing manual handling.

No matter what food or process...

... canning, freezing, baking ... meat, poultry, candy, fruit or produce ... Cambridge Wire Mesh Conveyor Belts can reduce your operating costs and increase product quality by continuous uniform processing with reduced manual handling. Lifelong rust-protection, quick drainage of process solutions, lack of odor and freedom from contamination are only a few advantages. All-metal belt is impervious to damage from heat and cold. There are no sharp edges because Cambridge belts are woven from round wire.

Cambridge Wire Mesh Conveyor Belts are made in any size, mesh or weave, and from any metal or alloy. Special raised edges or cross-mounted flights to hold your product during movement are available.

Call in your Cambridge Field Engineer to discuss how you can cut food processing costs by continuous operation. You can rely on his advice. Write direct or look under "BELTING, Mechanical" in your classified telephone book.

ASK FOR FREE 130-PAGE REFERENCE MANUAL ... illustrating and describing wire mesh conveyor belts. Gives mesh specifications, design information and metallurgical data. Ask for Special Industry Folder on your operation.

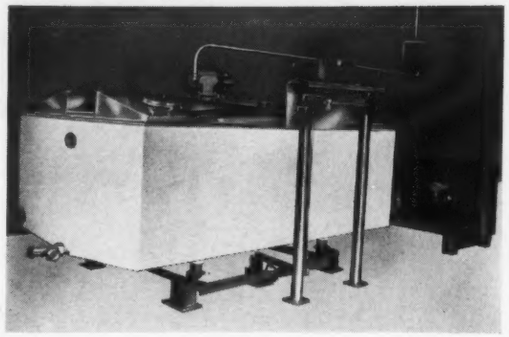
The Cambridge Wire Cloth Co.

WIRE CLOTH | METAL CONVEYOR BELTS | SPECIAL METAL FABRICATIONS

DEPARTMENT H, CAMBRIDGE 1, MARYLAND

OFFICES IN PRINCIPAL INDUSTRIAL CITIES

When inquiring check FP 4346 opposite last page



Weighs milk in refrigerated tank with analytical balance precision

Dairies can now buy milk by lb instead of by inch on dip stick

Uses: Measurement by weight of contents of farm bulk tanks for milk.

Features: Tank eliminates problem of calibrating dip sticks to measure contents. Accuracy is much increased over dip stick method — scale is sensitive to one part in two thousand, for example, ½ lb in 1000 lb milk. Scale is balanced to include tare weight of tank — so that weight shown on scale is that of contents only.

Description: Refrigerated tank is mounted on standard platform-type scale. When weight is to be measured, push-button controls empty refrigerant from walls of tank, so that weight shown will be that of milk only. This operation requires about five minutes. During this interval, contents are agitated for sampling purposes.

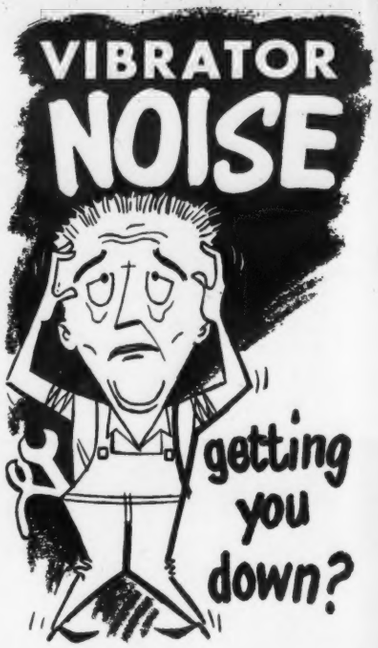
Tank is built low for easy operation — 35" from floor to rim. Available in sizes from 175 to 1000 gal. Refrigerated lines from tank to compressor are equipped with flexible joints. Added cost of scale and controls to bulk tank is less than $300.

(Weighmaster Farm Cooling Tanks are development of Girton Mfg. Co., Dept. FP, Millville, Pa. Check FP 4347 opposite last page.)

Porous stainless filter media featured on water filters

Complete description of standard sizes of water filters, for use with filter-aid to handle 8 to 939 gpm, is presented in illustrated two-page bulletin. Diatomite units use porous stainless steel filter media.

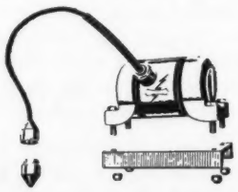
Release 214 is issued by Micro Metallic Corp., Dept. FP, 30 Sea Cliff Ave., Glen Cove, N. Y. Specify FP 4348 opposite last page.



The racket caused by conventional electric vibrators can drive a man out of his mind. So why torture yourself and your employees. . .solve the problem with the new silent Cleveland Electric Vibrators?

These new vibrators operate on the eccentric-weight principal—they make no more noise than an electric motor.

For detailed information, write for our new Electric Vibrator Catalog.



Pneumatic and electric vibrators for your every need.

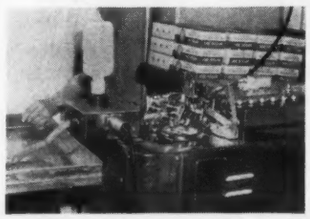
2818 Clinton Ave. • Cleveland 13, Ohio

When inquiring check FP 4349 opposite last page

System automatically oils sausage casing peeler

Tailored specifically for the Linker "Ty-Peeler" sausage casing remover, lubrication system automatically oils the 26 lubrication points on the unit. System supplies measured amounts of oil to each point on predetermined time cycle.

Lubricator consists of pump; reservoir (1 pt capacity); distribution system with branch lines, junctions; metering device. System is powered by peeler's main



Lubricator on casing peeler runs 55 hr without refilling

drive shaft, requires no additional power. Oil is pumped at rate of 5½ cc every 38 min, at average pressure of 40 psi. Reservoir is filled every 55 hr, the only attention system needs.

Peeling unit slits, cuts, and peels non-edible casings from meat products at rate of 400 to 600 lb meat/hr. It contains series of knives which cut long chains of links apart, then slit nose of skin. Casing is pulled off by vacuum.

(Lubrication system is manufactured by Bijur Lubrication Corp., Dept. FP, Passaic & Berdan Sts., Rochelle Park, N.J. . . . or for more information check FP 4350 opp. last page.)

(Ty-Peeler casing remover is produced by Linker Machine Co., Dept. FP, 30 Division St., Newark, N.J. Check FP 4351 opposite last page.)

For more information on product at right, specify FP 4352 . . . see information request blank opposite last page.

1906

In 1906 . . . the year marking introduction of the first Brunner-engineered product . . . artificial freezing still depended more on manpower than engineered horsepower.

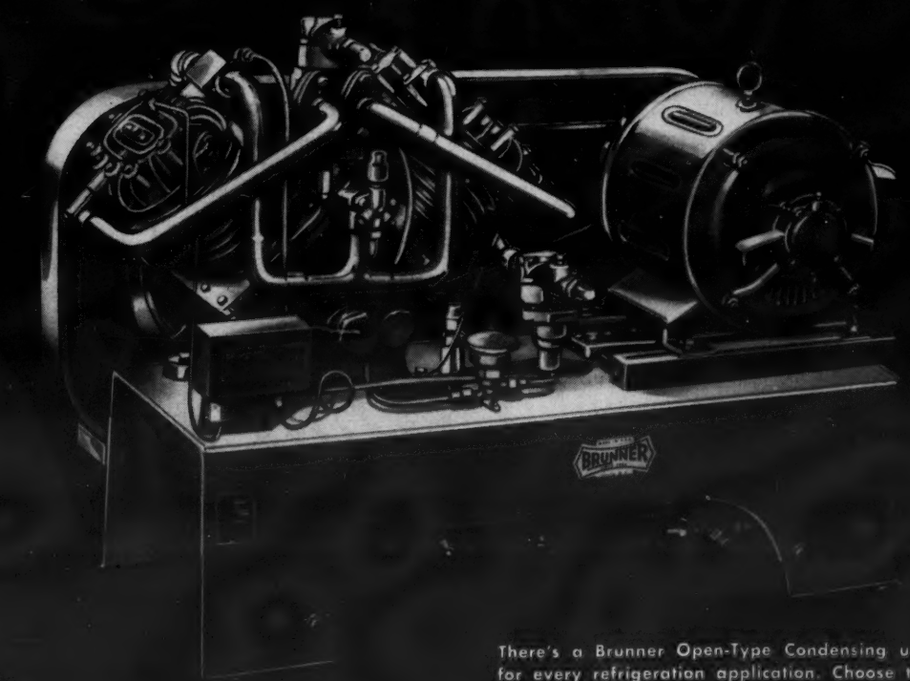
PROVEN QUALITY 50th Anniversary BRUNNER SINCE 1906 DEPENDABLE

TODAY—

Brunner engineering makes food processing easier...more accurate...more profitable

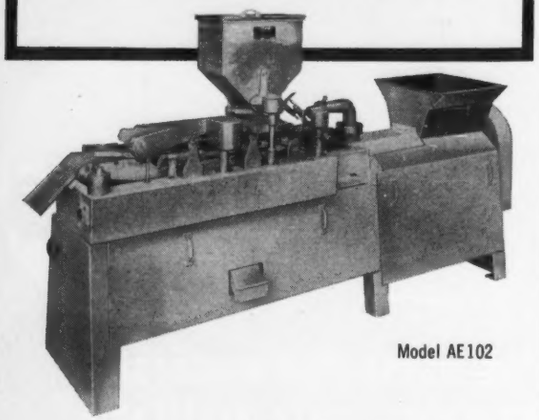
Go Brunner—for the most complete line of commercial and low-temperature Refrigeration Condensing units.

BRUNNER MANUFACTURING COMPANY, UTICA, N.Y.
THE BRUNNER CO., GAINESVILLE, GA.
IN CANADA: BRUNNER CORP. (CANADA) LTD., TORONTO, ONTARIO



There's a Brunner Open-Type Condensing unit for every refrigeration application. Choose the *right* unit for the *right* job. Sizes range from ¼ H.P. through 100 H.P.

the *CUT-ROL* FORMS UNIFORM MEAT BALLS AT 300 PER MINUTE



Model AE102

Here's the answer to automation in meat ball production . . . the Cut-Rol extrudes, cuts, rolls and dusts your meat mixture into balls of uniform size and weight, completely surfaced and ready for braising or canning . . . at speeds it would take 10 hand workers to match! Specifically engineered to replace slow and costly methods of meat ball forming, the Cut-Rol is . . .

FAST — Meat mixture is continuously force-fed by the Cut-Rol . . . feed can be simply regulated to vary production from 150 to 300 meat balls per minute — up to 1100 pounds per hour.

ACCURATE — Regardless of meat mixture consistency, the Cut-Rol will form meat balls of uniform weight.

ADJUSTABLE — Meat balls of various sizes may be formed with the Cut-Rol . . . size adjustment easily made with simple controls.

SANITARY — The Cut-Rol meets all sanitary standards . . . all parts which contact meat are stainless steel and other parts are heavily enameled to withstand high-pressure steam cleaning . . . unit quickly dismantled for cleanup.

COMPACT — The Cut-Rol occupies a floor area of only 4 by 10 feet and can be easily fitted into an existing production line . . . all gears and bearings are standard machine parts, obtainable locally.

For complete information and specifications, write:

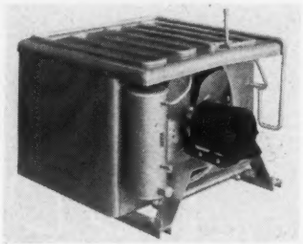
ALBA Engineering Company, Inc.

5707 South Alameda Street • Los Angeles 58, California

When inquiring check FP 4353 opposite last page

Compact defrosting system uses heat of compression

Defrosting system is mounted next to fan motor, applies heat continuously during defrost cycle without use of external heat sources. Unit also reportedly is effective heat exchanger, improving compressor capacity and efficiency of entire system during cold cycle.

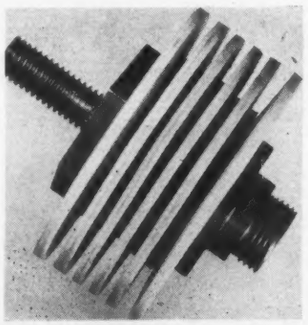


Defroster reportedly improves efficiency of refrigeration system

(Vapomatic defroster is produced by Refrigeration Engineering, Inc., Dept. FP, 7250 E. Slauson Ave., Los Angeles, Calif. . . . or for more information check FP 4354 on form opposite last page.)

Offer plastic in-line filters in all-welded construction

Porous plastic in-line filters, made of Teflon and Kel-F, are now offered in all-welded construction with molded flow passages. Filters are compact — 1 sq ft filter area is contained in

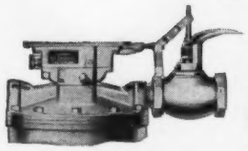


One sq ft filter area is provided in volume 2 x 3½" dia

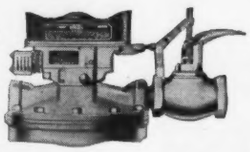
Automated LIQUID compounding packaging accounting

BOWSER BLENDING SYSTEM . . .

Blends two or more liquids in preset proportions, automatically, in closed, continuous production. Highest possible accuracy. May be integrated with packaging and accounting for automated production. Write for "BLENDING" folder.



Repeating dial delivers predetermined, repeating quantities automatically.



Predetermining dial delivers quantities up to 10,000 gallons, then shuts off.

Recording printer on meter prints quantity dispensed or received for accounting.

BOWSER ESTABLISHED 1885

BOWSER, INC., FORT WAYNE, IND.

1304 E. CREIGHTON AVE.

When inquiring check FP 4355 opposite last page

alphabetical index on page 106

. . . for alphabetical index of all processes, materials, services, and equipment discussed in this issue's editorial columns and advertisements, turn to page 106. "Quick-locator" starting on that page was a feature in FOOD PROCESSING years ago. It means extra work for the Editors, but it helps you, the reader, to find what you want in a hurry!

volume 2 x 3½" dia. Units are easily disassembled for cleaning, are available in sizes up to 10 sq ft filter area.

(Plastic in-line filters are produced by Porous Plastic Filter Co., Dept. FP, 30 Sea Cliff Ave., Glen Cove, N.Y. . . . or for more information check FP 4356 on form which is located opposite last page.)

Fiberglass reinforced pipe withstands 200 psi, 175°F

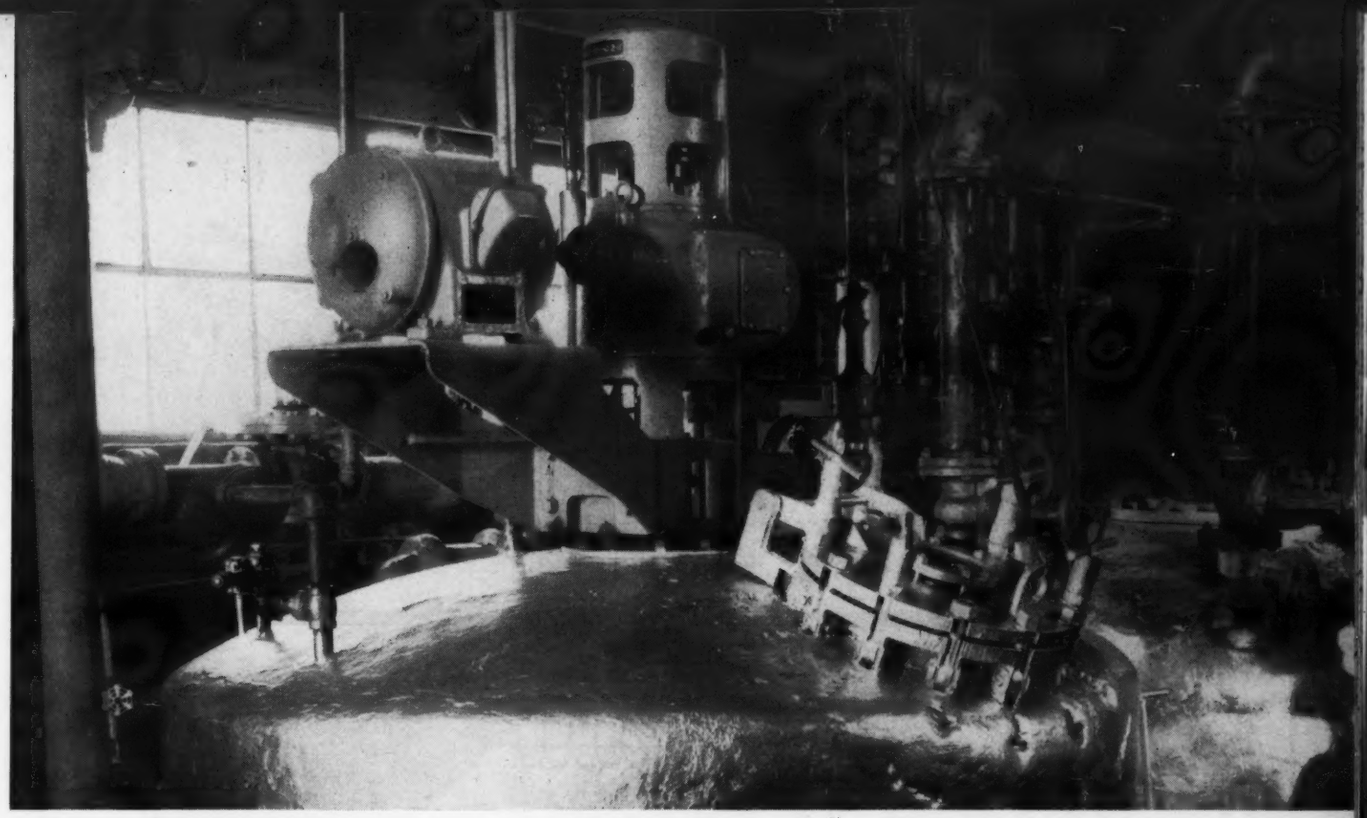
Intended for corrosive service, pipe is constructed of a fiberglass reinforced thermosetting resin. Generally speaking, pipe will withstand 200 psi and 175°F, although these limits vary with individual applications.

Plastic pipe is intended for corrosive service

Pipe is available in 1¾, 2, 2½, 3, 4, 6, 8, 10, 12" sizes, with lengths up to 20'. Couplings and other fittings are also available.

(Fiberglass reinforced plastic pipe is manufactured by Reinforced Laminates, Inc., Dept. FP, 3040 E. Hennepin Ave., Minneapolis 13, Minn. . . . or for more information check FP 4357 on form which is located opposite last page.)

For more information on product at right, specify FP 4358 . . . see information request blank opposite last page.



How to keep 25,000 lbs. of product *from burning up*

How can you assure even cooking, without burning, in batches as big as 25,000 lbs.? Here's how one company does it with a LIGHTNIN Mixer:

Sethness Products Co., Chicago, makes high-quality caramel from sugar, in the big pressure kettle you see here. The sugar must be stirred constantly, while temperature rises and holds steady above 250°F for several hours, then quickly drops to 200°F. Good temperature control is vital.

What the mixer does

To meet the critical stirring requirements, Sethness uses a Series "E" LIGHTNIN Mixer with stainless shaft and turbines. The mixer creates a rapid, uniform flow of sugar throughout the kettle. It keeps temperature equalized, so sugar caramelizes uniformly. And it provides high coefficient of heat transfer, so temperature changes in the vessel jacket are transmitted quickly and evenly through the batch.

You can meet the most exacting fluid mixing requirements—in any batch size, any tank or container—with LIGHTNIN Mixers. You get the *one* correct mixing pattern that exactly meets your needs—selected scientifically from many hundreds of standard power-speed combinations. Results are guaranteed, unconditionally.

Lower mixing costs

You save on installation and maintenance, too. Every LIGHTNIN Mixer comes to you assembled and aligned, ready to operate. Most models are easily converted to meet process changes, as they occur. Hundreds of LIGHTNINS have been in service 20 years and more.

For quick, competent help on mixing that does what you want it to do, call in your LIGHTNIN Mixer representative today. Or write us direct.

Lightnin® Mixers

MIXCO fluid mixing specialists

MAKE ANY OPEN TANK an efficient mixing vessel, by adding a LIGHTNIN Portable Mixer. Thirty models; wide choice of motors and materials to match your conditions.

FOR LATEST MIXING INFORMATION and full description of LIGHTNIN Mixers, send for these helpful bulletins:

- ☐ B-102 Top or bottom entering; turbine, paddle, and propeller types: 1 to 500 HP
- ☐ B-103 Top entering; propeller types: ¼ to 3 HP
- ☐ B-108 Portable: ⅛ to 3 HP
- ☐ B-104 Side entering: 1 to 25 HP
- ☐ B-112 Laboratory and small-batch production types
- ☐ B-109 Condensed catalog showing all types
- ☐ B-111 Quick-change rotary mechanical seals for pressure and vacuum mixing
- ☐ B-107 Data sheet for figuring mixer requirements

Check, clip, and mail with your name, title, company address to:

MIXING EQUIPMENT Co., Inc. 132-a Mt. Read Blvd., Rochester 11, N. Y.

In Canada: Greey Mixing Equipment, Ltd., Toronto 10, Ont.

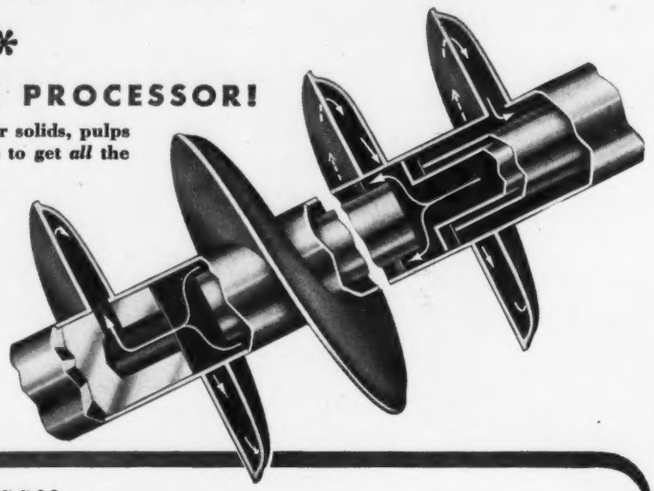
if you have a Cooling...Heating...or Drying problem

investigate the revolutionary advantages of...

THE holo-flite* PROCESSOR!

If you have processes where slurries, granular solids, pulps or pastes are cooled, heated or dried, be sure to get *all* the facts on HOLO-FLITE advantages.

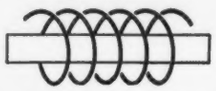
HOLO-FLITE handles such processes — *in continuous flow* — in as little as 1/5th the space of other types of heat exchangers. What's more, it is readily adaptable to a wide range of applications — is simple to install and maintain — and provides many other important savings.



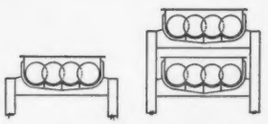
typical HOLO-FLITE *advantages...*

ITS APPLICATION FLEXIBILITY is almost unlimited. It cools, heats, or dries. It handles granular solids, pulps, pastes, slurries and fluids with equal ease. Its heat transfer agent can be water, refrigerant, hot oil, Dowtherm, steam or other liquids or vapors at any of a wide range of temperatures. It cools materials in ranges from 1800°F to 0°F. It heats and dries with hot oil to 600°F...with Dowtherm to 750°F...with steam to 150 lbs. per sq. in. pressure.

THE LARGE HEAT-TRANSFER SURFACE saves space — HOLO-FLITE requires as little as 1/5th the space of other heat-exchange equipment of comparable capacity. Moreover, a more complete heat transfer is effected, resulting in more uniform processing.



ROTATION IS SLOW — granular and powdered solids are handled with practically no dusting — negligible abrasion. There are no dust recovery problems — a further saving in installation, maintenance and operating costs!



ITS OPERATING CAPACITY is readily adaptable to virtually any requirements by simply varying the diameter, pitch, and length of flights, as well as the number of "tiers." Multi-tier units require no more floor space than single-tier installations!

HOW HOLO-FLITE WORKS...

Basically the HOLO-FLITE consists of one or more flights of hollow-bladed screw conveyors. The product to be processed moves through a trough housing the conveyor screws. The heat-transfer fluid circulates through the hollow blades and shafts of the conveyor. The product is constantly rotated into, around, under and over the blades and shafts through which the heat-transfer fluid is circulating, assuring quick, uniform heat passage between the two mediums — *as the product is continuously moved along in a bulk-flow without interruptions!*

GET THE COMPLETE FACTS on Holo-Flite savings and how this field-proven unit can save space, time and money on your processing operations. This eight-page descriptive bulletin will gladly be sent on request. No obligation, of course!

WESTERN Precipitation CORPORATION

DESIGNERS AND MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Offices: 1061 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
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HOBART BUILDING, SAN FRANCISCO 4
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

* T.M. Reg. (Hollow-Flite)

When inquiring check FP 4359 opposite last page

new solutions of processing problems

Preservation by Antibiotics

(*Continued from page* 17)

into ice cakes is relatively simple. It involves adding about 4.5 grams of a formulated product (carrageen, calcium acetate, and chlortetracycline) in the water needed to make a 300 lb cake of ice. This has been successful as long as the iron content of the water is low.

In scientific trials in Puerto Rico, the antibiotic solution is sprayed on fresh-dressed side of beef to retard surface spoilage. Carcass was also infused with antibiotic solution before it was dressed out. Antibiotic-treated beef held its freshness at room temperature nearly twice normal time, allowed increased aging for tenderness

Several years of intensive study and use of the compound, aureomycin, form a firm background of knowledge for judging its relative effect on animals and humans. Millions of humans have taken the product orally for medical reasons, in amounts many times greater than is needed for food preservation, without adverse effect. Billions of swine and chickens have been fed the compound to speed their growth. The compound, being destroyed during cooking, overcomes the objection to possibility of sensitizing individuals, or causing outbreaks from bacteria which might have become resistant to antibiotics.

As little as one part in 40 million of Aureomycin is detectable by biologic assay — and extensive data have shown that normal cooking procedures of all kinds remove the chlortetracycline to the point where it is undetectable even at that low level. Other research indicates that the antibiotic is dissipated from the flesh of fish and beef even during storage.

(Acronize process, utilizing the antibiotic, Aureomycin chlortetracycline, is a development of and franchised to poultry processors through the Fine Chemicals Div. of American Cyanamid Co., Dept. FP, 30 Rockefeller Plaza, New York 20, N Y. Check FP 4360 on form opposite last page.)

Automatic feeder at Loft Candy Corp. replaces manual operation . . .

Doubles production rate of pecan-coated candy

Problem: Manual coating of chocolate-covered taffy candy with chopped pecans was a slow, difficult operation at Loft Candy Corp. in Long Island City. Women stationed at conveyor belt picked up bars coated with liquid chocolate, rolled them in box containing nuts, replaced bars on line for subsequent cooling and packaging. Women had to hurry to keep up with production, often resulting in uneven coating on the bars.

Solution: In present set-up, automatic feeder is positioned over conveyor, dropping steady

Chocolate-covered candy bars are dropped onto bed of chopped pecans, pass beneath vibrating feeder which coats tops

stream of finely ground nuts onto bars as they pass beneath. Belt is kept covered with bed of nuts to coat bottom of bars.

Feeder is mounted on steel frame which is locked to conveyor. Nuts fall uniformly from 16″ wide vibrating tray inclined slightly from horizontal. Tray is fed through stainless overhead hopper. Feed rate is controlled by hand lever at side of machine. Unit is powered by 1/8 hp motor, and working frequency is 1850 vibrations/min. Operation is quiet, and vibration transmitted to structural members is held to minimum.

Results: Loft has doubled production rate of this candy bar since installation of the feeder, and uniformity of coating has improved. Only maintenance required is nightly washdown. Loft now plans to install more of these units in other operations.

(Velofeeders are manufactured by Richardson Scale Co., Dept. FP, Van Houten Ave., Clifton, N. J. . . . or for more information check FP 4361 on form opposite last page.)

They all taste better if you make 'em with '999'

Morton '999' Salt insures uniform flavor and quality in processed foods for two reasons:

1. Morton '999' is *guaranteed* always to contain more than 99.9% pure sodium chloride. The remaining 0.1% (or less) is a neutral inert sodium salt—and never bitter calcium or magnesium compounds.

2. Morton '999' Salt is produced by vacuum pan evaporation to assure you a salt that is clean, free-flowing... evenly soluble. It has a more constant weight per volume ratio which insures more accurate salt measurement.

For more information about Morton '999' Salt—and about Morton service and technical help—write this week to:

MORTON SALT COMPANY

Industrial Division, Department PL-1

120 South La Salle Street, Chicago 3, Illinois

When inquiring check FP 4362 opposite last page

"Because Business Publications bring us vital news of people and products..."

says **ALFRED E. PERLMAN**, President, New York Central Railroad

"...we read the business magazines of our field widely and regularly."

Consider the number of fields that affect railroad operations, and you can see why dozens of Business Publications are "never missed" by Mr. Perlman and his associates.

Top men in every business feel this same way about the Business Publications they read regularly. They like the timely, pertinent information they get from alert reporters and businessmen writers... and they like the new ideas and product information they get from the advertisers. These advertisers know that the best way to get their products read about by the men they want to reach is to advertise in Business Publications—the magazines their prospects "never miss".

NBP

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The national association of publishers of 173 technical, professional, scientific, industrial, merchandising and marketing magazines, having a combined circulation of 4,098,937... audited by either the Audit Bureau of Circulations or Business Publications Audit of Circulation, Inc.... serving and promoting the Business Press of America... bringing thousands of pages of specialized know-how and advertising to the men who make decisions in the businesses, industries, sciences and professions...pin-pointing the market of your choice.

Write for a list of the NPB publications and the "Here's How" booklet, "How Well Will We Have to Sell Tomorrow?", written by Ralston B. Reid, Advertising & Sales Promotion Manager of the Apparatus Sales Division, General Electric Company.

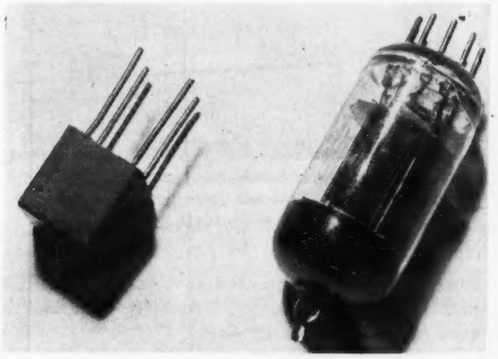
INSTRUMENTATION & CONTROL

Simple "magnetic" amplifier replaces vacuum tubes, lasts indefinitely

A "natural" for food instrumentation — non-aging, immune to moisture, shock

New replacement for vacuum tubes in instrument design works on magnetic principle to amplify tiny current signals, rather than semi-conductance principle of transistors. The miniature wire-bound amplifier is encased in plastic, and will last for years, vs. an average 500 hr for vacuum tube operation.

Termed the "ferristor", unit has advantages which should help extend the applications of electronics in the food field by overcoming many present

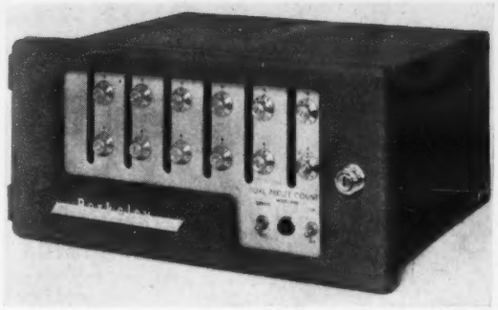


Tiny (9/16"), plastic-encased ferristor, at left, performs most vacuum tube functions

objections to vacuum tube equipment in a food plant. They are non-aging and are immune to damage caused by shock, vibration, moisture, or prolonged overloading. They also produce little or no heat, permitting dust-tight enclosures, and are expected to greatly reduce down-time in control equipment.

First instruments to use the ferristor amplifying units are a dual preset counter-controller and an events-per-unit-time recorder. These instruments can be hooked up with photocells, magnetic pick-ups, electrical contacts, etc. for controlling the counting of definite numbers of items, such as cans, filled packages, oranges, individual candies, etc.

For controlling high speed operations, the counter



Preset counter uses ferristor circuits—has only two vacuum tubes, vs. some 54 in older models

will first slow the line down as the desired number of units is approached, then a second signal stops the flow at the preset count total.

Other uses for the ferristor in food processing include applications in weigh-batching, sorting and packaging operations, and cycle control of processing operations.

(Ferristor magnetic amplifier and preset controller-counters are developments of Beckman Instruments, Inc., Berkeley Div., Dept. FP, 2200 Wright Ave., Richmond 3, Calif. . . . or for more information check FP 4363 on form opposite last page.)

Lists stock-item instruments for immediate delivery

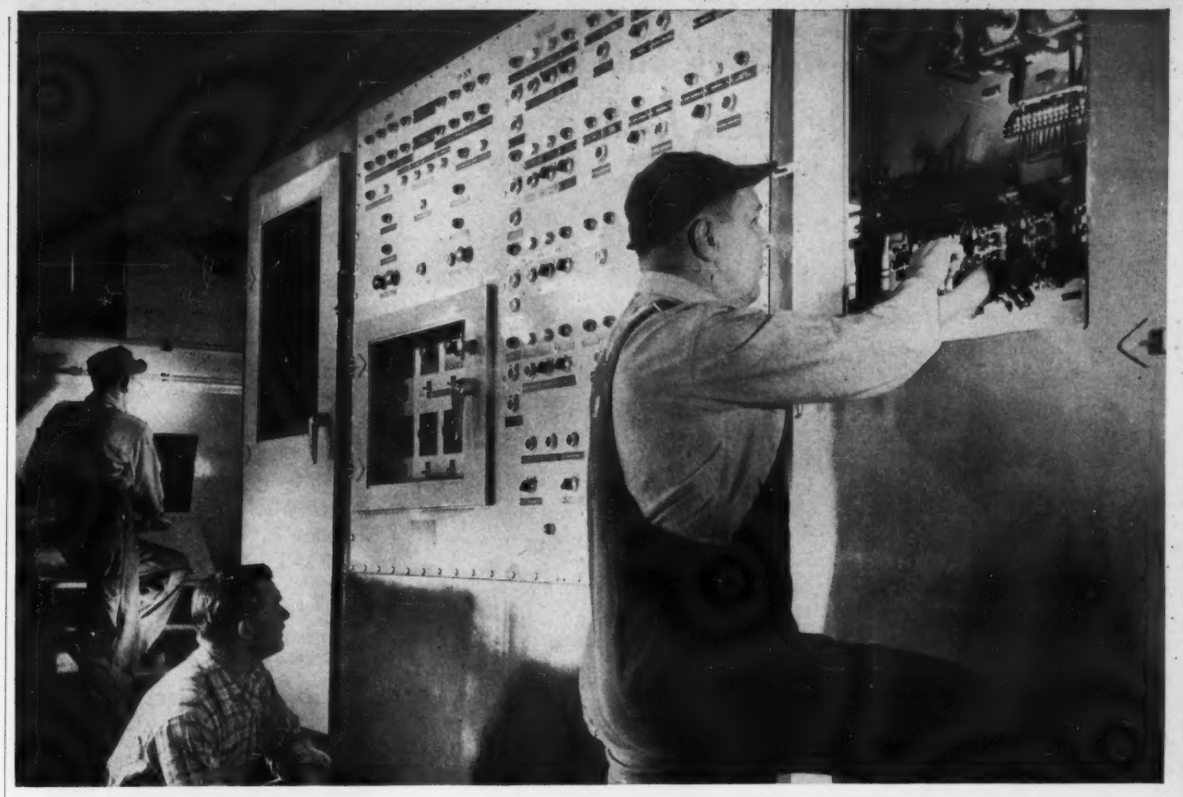
All instruments described in catalog are shipped from various points throughout the country, within 24 hours of receipt of orders. Included are variable-area flow meters, variable-head flow meters, flow test kits, recorders, controllers, transmitting instruments, chlorinating equipment, and specific gravity testers.

Catalog 2 is issued by Fischer & Porter Co., Dept. FP, 397 Jacksonville Rd., Hatboro, Pa. When inquiring specify FP 4364 opposite last page.

Describes how company sets up automatic control systems

Well-illustrated booklet discusses part of company in installing automatic control systems. Various phases, such as consultation, design, purchasing, construction, and start-up are covered. Booklet also includes number of case histories.

Bulletin S-10 can be obtained from Automatic Temperature Control Co., Inc., Dept. FP, 5200 Pulaski Ave., Philadelphia 44, Pa. When inquiring specify FP 4365 on form opp. last page.



Worked to death... to insure the life of your proportioning system

If there's anything worth its weight in gold in a proportioning system control panel, it's *dependability*. Before a single electrical component was designed into this panel being wired at Richardson Scale Co., its prototype had been literally worked to death in a controlled testing operation. It's survival of the fittest . . . and only the fittest is acceptable. Richardson's reputation as a producer of dependable control panels rests, in the last analysis, on the selection of tested components and on intensive and varied experience in applied electronics.

In addition, Richardson supplies each control panel completely wired and pre-tested, invites the customer to familiarize himself with it *before installation* and takes responsibility for complete system operation. Detailed instructions and diagrams are supplied for each job.

But this is only part of the story. The best of control panels will not pinch-hit for a poor automatic weighing unit, mis-applied materials feeding equipment or improper storage bin design. Richardson know-how in this field embraces 50 years of experience in handling over 400 materials.

When it comes to proportioning, you're in good company when you come to Richardson. Look at some of the others who now have *proportioning by Richardson:*

The Firestone Tire & Rubber Company • General Foods Corp.
General Electric Company • U. S. Bureau of Mines
Reynolds Metals Company • American Rice Milling Co., Inc.
Union Carbide & Carbon Corporation • Ford Motor Co.
Fleischmann Distilling Corp. • The Flintkote Company
Johnson & Johnson • National Distillers Products Corp.
Owens-Illinois Glass Co. • Pittsburgh Coke & Chemical Co.
Celanese Corp. of America • Goodyear Tire & Rubber Co.
E. I. Du Pont de Nemours & Co., Inc. • and many more.

Richardson

MATERIALS HANDLING BY WEIGHT SINCE 1902

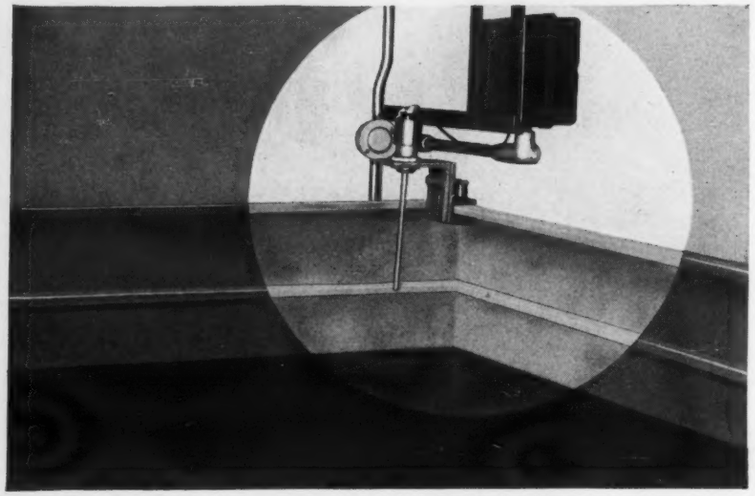
RICHARDSON SCALE COMPANY
Clifton, New Jersey

Atlanta • Boston • Buffalo • Chicago • Cincinnati • Detroit
Houston • Memphis • Minneapolis • New York • Omaha
Philadelphia • Pittsburgh • San Francisco • Wichita • Montreal
Toronto • Havana • Mexico City • San Juan

Richardson Scales S.A. 1-3 Rue de Chantepoulet, Geneva, Switzerland

When inquiring check FP 4366 opposite last page

TEKTOR Keeps Hershey Chocolate from Overflowing Open Tank

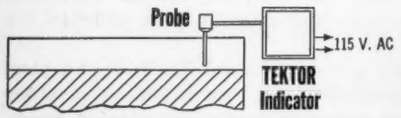


How to keep a 90,000 pound open milk chocolate storage tank from overflowing was the problem faced by the Hershey Chocolate Corporation.

Hershey Engineers found a solution by installing a Fielden TEKTOR High-Level Indicator Controller and Probe. Now, when chocolate level rises to 4 or 5 inches from the tank lip, this simple but dependable instrument flashes and sounds a warning so that the inflow of chocolate can be stopped.

Why TEKTOR Level Control is YOUR Solution

- Indicates or controls level of fluids, powders, solids (conducting or non-conducting)
- Electronically controls level as close as 1/16"
- A ready-to-install unit
- No moving parts . . . only one radio tube
- Regular plant personnel can maintain it
- Low first cost . . . low operating cost.



A TEKTOR probe is installed vertically and its electrical capacity changes when chocolate level is 4 or 5 inches from the lip of the tank. This de-energizes the Indicator relay and switches on the warning light and alarm.

Robertshaw-Fulton CONTROLS COMPANY

Send this coupon today, and find out how Fielden Simplified Instrumentation can solve your process control problems . . . accurately and economically.

FIELDEN INSTRUMENT DIVISION
2920 N. Fourth St., Dept. N, Philadelphia 33, Pa.
Please send me bulletins about your low-cost, accurate controls.

☐ TEKTOR Level Control
☐ Electronic Temperature Control
☐ Resistance Thermometer Recorder
☐ Proximity Meter

NAME_____ TITLE_____
COMPANY_____ ADDRESS_____
CITY_____ STATE_____

When inquiring check FP 4367 opposite last page

instrumentation

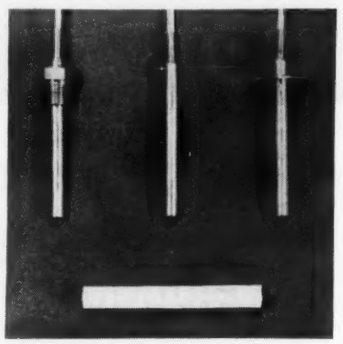
Midget 1 oz thermostats give precise control in small places

Will actuate at temps between −50 to 500°F

Uses: For precise temperature control or heat detection wherever installation space is at a premium, as bearings, pumps, heated equipment.

Features: Midget thermostat can be set to actuate at any temperature between −50 to 500°F.

Description: Midget thermostats are ¼" diam and less than 2½" long. They weigh approximately 1 oz. Contacts open when temperature exceeds specified temperature; contacts on inverse



Regular-size cigaret indicates size of midget thermostats

action models close. Different head styles are available to meet mounting requirements. Cartridge style for insertion into cylindrical cavity, screw-in models with hexagonal heads for threading into ⅛, ⅜" bushings or tapped holes, flange head unit for surface mounting. Thermostat is rated to handle an electrical load of 1 amp, 115 volts AC. Larger loads can be handled with a relay. Cartridge bodies and mounted accessories are of stainless steel. Wiring leads are Teflon coated.

(Thermoswitch is a product of Fenwal, Inc., Dept. FP, 243 Pleasant St., Ashland, Mass. . . . or for more information check FP 4368 on form which is located opposite last page.)

What's a "New Solution"?

It's an article in FOOD PROCESSING describing a new way of solving a tough plant operating problem.

In each issue you will find specific "case histories" showing how these processing problems were solved.

Each article states the operating problem . . . explains the process used and gives details of how problem *was solved* . . . shows results secured.

Take a look at "New Solutions" articles in this issue — they might suggest a "solution" for some of your tough processing problems.

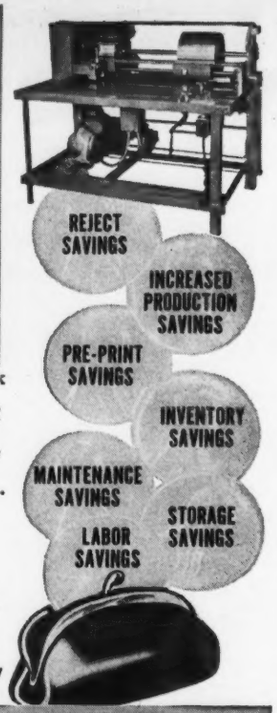
START THIS MARKING PROFIT PARADE

.....use industrial's **NEW AUTOPRINTER!**

With the new, modern Autoprinter, you date, mark or code multiwall bags and containers as you need them! Completely automatic and electronically controlled, the Autoprinter works right with your production line . . . at up to 3,000 impressions per hour!

Investigate how the Autoprinter can speed your operation, save container pre-printing and storage costs, and eliminate costly manual marking expense.

Write for details and catalog today. Dept. FP.



ime INDUSTRIAL MARKING EQUIPMENT company, inc.
454 BALTIC STREET | MAin 4-2601
BROOKLYN 17, N.Y.

When inquiring check FP 4369 opposite last page

SALES MANAGER

$30,000

HIGH PRECISION MACHINERY AND CONTROLS

Nationally known manufacturer, a recognized leader in the field, offers an exceptional opportunity for an experienced sales manager capable of directing a well-trained sales organization . . . as well as assuming responsibility for advertising, sales promotion and all other phases of marketing.

Sales are direct to industrial users.

- The right man should have successful sales management experience with such products as: ELECTRIC MOTORS — MACHINE TOOLS — CONTROLS — TURBINES — COMPRESSORS . . . or food processing machinery.
- Preferred age 38 to 50 years.

Excellent bonus, insurance and retirement program in addition to salary stated above.

Your reply will be treated in complete confidence and should include age, present connection and home telephone number.

Box FP-100, c/o Food Processing, 111 E. Delaware Pl. Chicago 11, Illinois

Checks control temperatures every 120 seconds

Gives audible and visual alarm

Uses: Automatically checking control temperatures in process work, monitoring bearing temperatures of pumps, turbines, and motors.

Features: Unit gives audible and visual alarm should any station be "off limits".

Description: Control center automatically checks temperature at each control station in fixed time interval, 32 stations in 120 seconds. Pilot light indicates point being checked and the amount of correction needed at any point is visually indicated by electronic temperature-indicator. Control center includes temperature indicator, pilot lights, pulse-actuated stepping switch, pulsing timer, and holding relays. Manual reset switch clears alarm indications after temperature corrections have been made. Manual pulsing push-button switch provides means of manually checking any of temperature points.

(Control center is a product of Wheelco Instruments Div., Barber-Colman Co., Dept. FP, 1300 Rock St., Rockford, Ill. . . . or check FP 4370 on form opposite last page.)

Infrared spectrophotometer completely automatic

Bulletin describes new infrared spectrophotometer, which features high performance at low cost. Specifications and reproductions of transmittance type curves produced by unit are included.

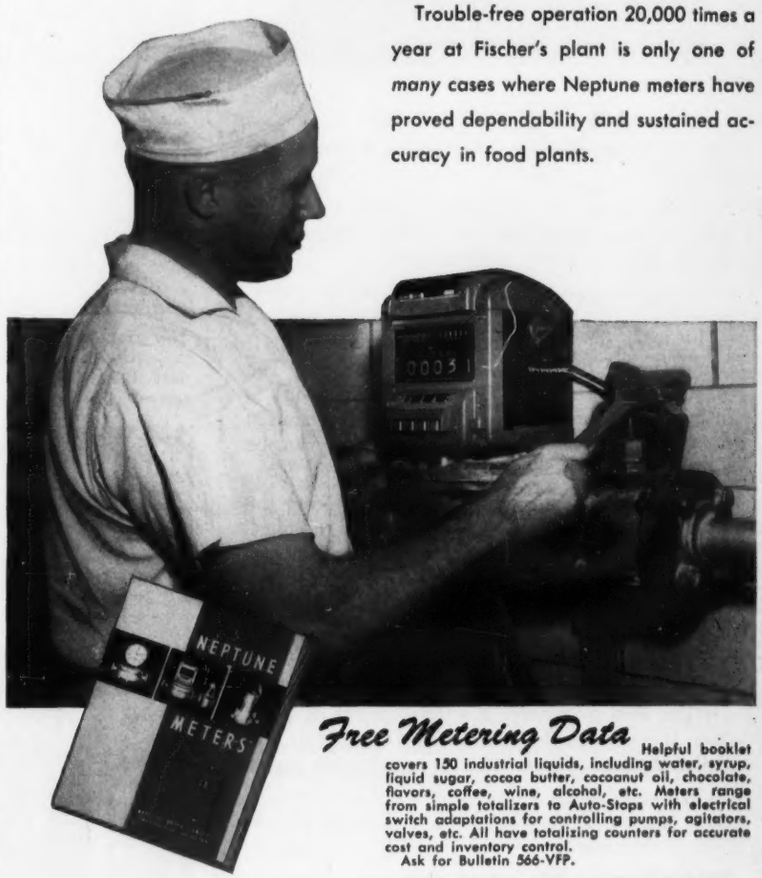
Bul 410 is issued by Beckman Div., Beckman Instruments, Inc., Dept. FP, Fullerton 1, Calif. When inquiring reader may simply check FP 4371 on Reader Service slip which is located opposite last page.

Push Button Quality Control

20,000 Batches a Year!

For closer, *automatic* control over cake and pastry sweeteners, Fischer Baking Co. switched their Asbury Park plant to liquid sugar . . . with accurate measurement provided by this Neptune Auto-Stop meter. Every 15 minutes the baker pushes buttons to set the pounds required, and opens the valve. The meter follows through . . . shuts off automatically at the right pound. Big savings are reported in time and labor. No more carting, piling, scaling, and dumping of granulated sugar. It's neater, too, because the sugar stays *inside* pipes and tanks all the way.

Trouble-free operation 20,000 times a year at Fischer's plant is only one of *many* cases where Neptune meters have proved dependability and sustained accuracy in food plants.



Free Metering Data Helpful booklet covers 150 industrial liquids, including water, syrup, liquid sugar, cocoa butter, cocoanut oil, chocolate, flavors, coffee, wine, alcohol, etc. Meters range from simple totalizers to Auto-Stops with electrical switch adaptations for controlling pumps, agitators, valves, etc. All have totalizing counters for accurate cost and inventory control.
Ask for Bulletin 566-VFP.

NEPTUNE METER COMPANY
19 West 50th Street, New York 20, N. Y.

Branches in:
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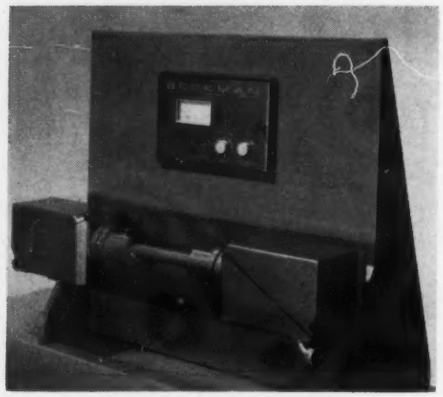
When inquiring check FP 4372 opposite last page

Continually monitors beer for clarity, turbidity



Flow colorimeter detects protein haze or suspension; not affected by bubbles

Designed specifically to protect customer acceptance of beer, flow colorimeter continually monitors the final product for clarity and turbidity.

Operating on the photoelectric principle, the instrument detects protein haze or suspension in finished beer, giving a constant check of filter efficiency. It is also useful during the filter precoat cycle. The instrument, employing a 25 cm pathlength, indicates in percent transmittance and will operate a standard potentiometric recorder. An alarm system can be incorporated, if desired.

In a typical installation in the brewing process, the instrument is installed just downstream of the filter. Thermospacers are provided to prevent window fogging at low temperatures (32°-34°F). A pathlength of 20 to 40 cm is required. Corning filter number 2-78 eliminates the effect of color changes by transmitting light in a region where beer does not absorb. Bubbles are no problem: stream is under pressure.

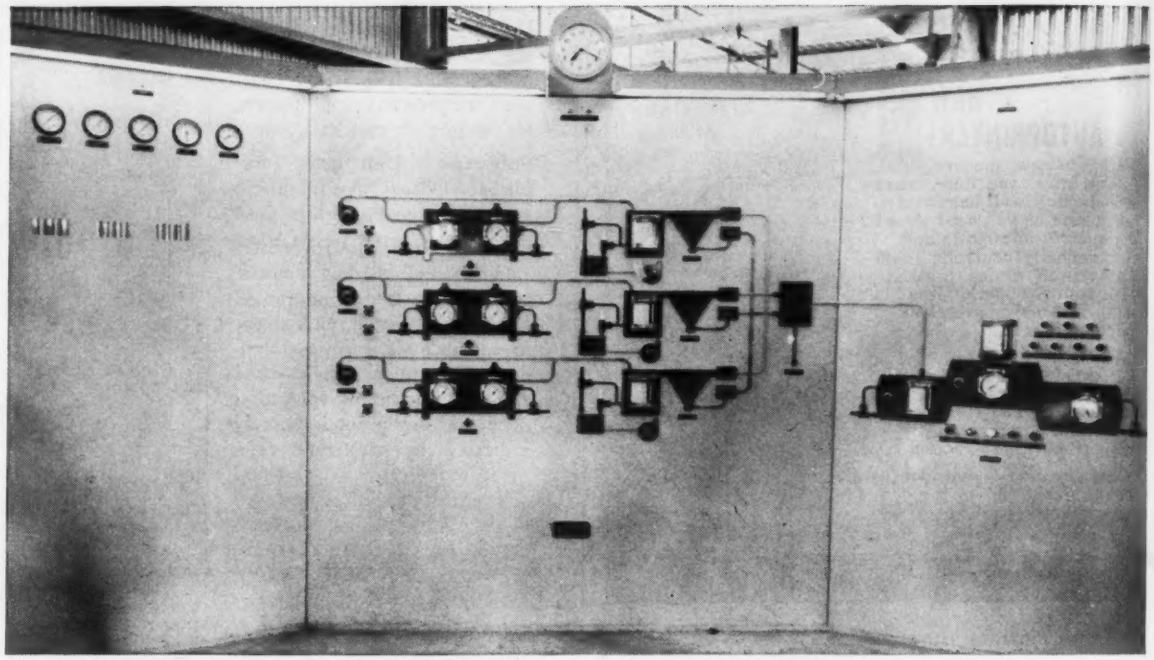
(In-line flow colorimeter is a development of Beckman Instruments, Inc., Beckman Div., Dept. FP, Fullerton, Calif. Check FP 4373 opposite last page.)

Tables incorporate recent changes in electrical units, temp scale

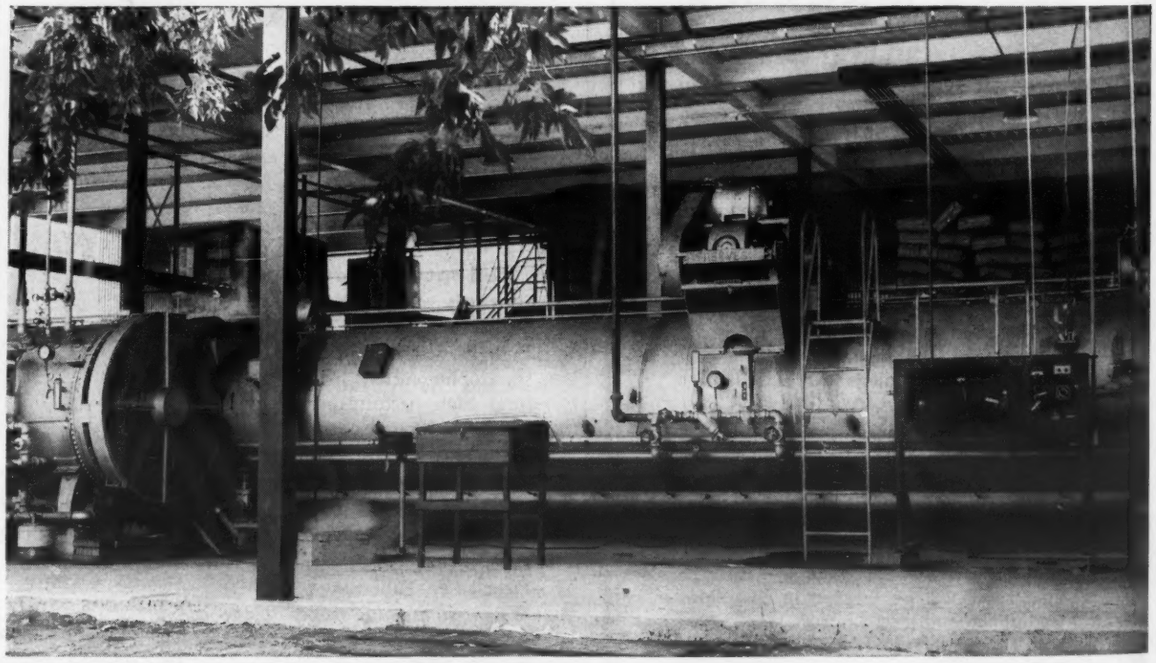
Sixteen-page booklet, "Standard Conversion Tables", gives thermocouple temperature-millivolt equivalents. Temperature is expressed on the International Temperature Scale of 1948.

Bul F-7255 is issued by Barber-Colman Co., Wheelco Instruments Div., Dept. FP, 1203 Rock St., Rockford, Ill. Specify FP 4374 opp. last page.

Now ! PUSH-BUTTON



The graphic panel shown above gives a complete picture of the entire canning process at a well-known mid western cannery. TRANSET Indicators at left show Blanching temperatures, recorders in the center keep track of the Grading operation and the instruments on the right record temperature and pressure of the Sterilizing Section (Pre-heating, Cooking, Cooling). Lower photograph shows Pressure Cooker-Cooler units at this model canning plant.



CANNING IS HERE !

Taylor System brings automation to the Canning Industry for the first time

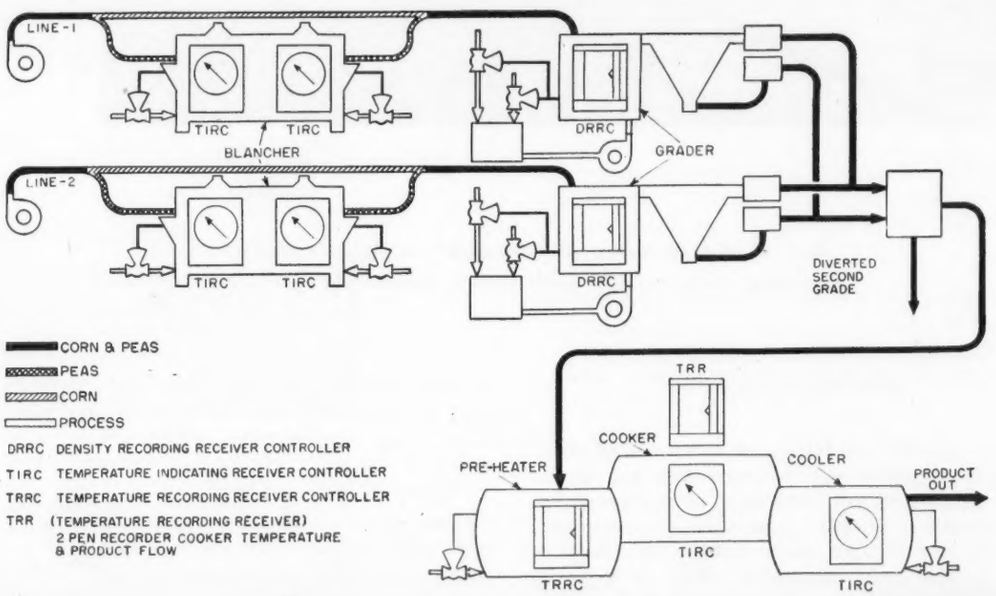
THE PHOTOGRAPHS on these pages, taken at the plant of one of our more progressive mid-western canners, show the first completely automatic control system in the industry. It brings to food processing the advances in automation that have been developed in the chemical, petroleum and other continuous process industries in recent years.

As shown by the drawing below, Blanching, Grading, Preheating, Cooking and Cooling are all under complete, continuous, automatic control. A graphic panel, located at a central point schematically presents the complete canning process, thus an operator at the control center can constantly evaluate and control the process. Measurement is by TRANSAIRE* Temperature Transmitter. Control, indication and/or record of temperatures and pressures at the various stages are accomplished by means of the Taylor TRANSET* System of miniature instrumentation in which TRI-ACT* Controllers, and TRANSET Indicators and Recorders, all plug in to the graphic panel.

Among the many benefits accruing from this fully automatic control system are: *closer quality control; considerable savings in the consumption of steam, water and air; absolute minimum of operator attention; a convenient intelligence center for supervision.*

See this latest development in food processing control demonstrated at the Canners Show, and ask your Taylor Field Engineer or write for further details. Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

*Reg. U.S. Pat. Off.



Taylor Instruments MEAN ACCURACY FIRST

See this system demonstrated at the Canners Show – EXHIBIT SPACE C-14

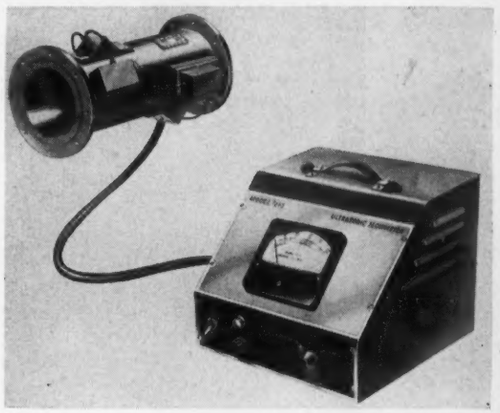
When inquiring check FP 4375 opposite last page

Measures mass or volume flow without flow obstruction

Ultrasonic flowmeter has accuracy of better than 2% full scale

Uses: Measuring mass or volume flow of most slurries, catsup, milk, distilled water, aqueous solutions, liquefied gases.

Features: Flowmeter has no moving parts or restrictions to obstruct flow. Variations due to pressure, viscosity, gas bubbles, solids in suspension, electrical conductivity, or position of installation are eliminated.



Ultrasonic flowmeter can be used with any fluid regardless of its electrical conductivity

Description: Meter is built into a short section of pipe. Two transducers, each of which transmits and receives controlled impulses of sonic energy across the pipe section, measure volume flow. Difference in number of pulses received by each indicates flow rate. Increasing flow rate increases number of downstream pulses and decreases number of upstream pulses. Decreasing flow rate results in the opposite effect.

By adding a third tranducer the volumetric flow-rate meter can be converted to a mass flowmeter. Variations in density can thus be compensated. Conventional voltage indicators are used for both volume and mass flow output signal. Small or reflected noise does not trigger the ultrasonic transmitter.

Totalizing of mass transferred is accomplished by integration of gravimetric rate signal, using built-in analog computer.

Present designs have capacity up to 12,000 lb/min. Instrument can be adapted to any standard pipe size down to 2". Temperature limits are −50° to 225°F.

(Ultrasonic flowmeter is development of Fischer & Porter Co., Dept. FP, 48 Jacksonville Rd., Hatboro, Pa. Check FP 4376 opposite last page.)

Control of color factor at Kellogg branch plants was an exacting, delaying task until simple instrument took over

Electronic color 'expert' replaces humans

to elevate quality control of flaked cereals

KARL ROBE, Associate Editor

New "experts" are taking over the task of color control in producing ready-to-eat flake-type breakfast cereals from corn, rice, wheat, etc. in their many variations. In the past, experts were human—men experienced through many years in the business of toasted cereal production. With development of new electronic methods of color control, the human element has been replaced by instruments at the Kellogg Company, with headquarters in Battle Creek, Mich.

Kellogg has developed an extensive quality control program to objectively control the many variables involved in making their products—flake size and thickness, moisture content, and the like. One of the more important quality factors, both from a technical and promotion side, is color. The subjective angle becomes more acute as decentralization programs dictate branch plants—uniformity of color must be maintained in the product, no matter where in the country it is purchased.

One method of maintaining this uniformity was to have branch plants periodically mail samples to the central lab. Under another method, "ideal" samples were selected in the main plant and mailed to individual branch plants periodically so that personnel could compare and readjust, if necessary, their own practices.

At the Kellogg plant in San Leandro, Calif., an electronic color-grading instrument is now being used as part of the regular daily quality control routine. Samples are periodically taken at the oven for each

(*Continued on page* 95)

At Kellogg's San Leandro, Calif., plant five simple steps result in an impersonal index of color for each of their cereal products.

Robert Walker, head of quality control dept., takes sample at discharge end of oven

Then, sample is ground in Laboratory Construction Co. grinder

Sample is placed in shaker for two minutes

Screened cereal is placed in lucite cup

Instrument scans surface of sample, reads reflected color intensity on front panel dial

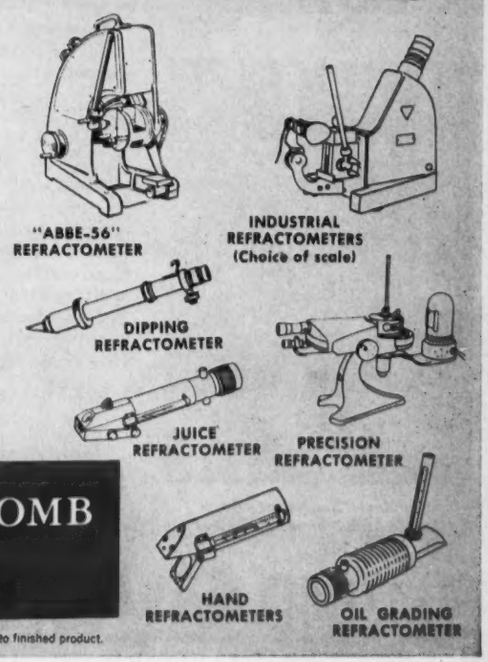
New!

FAST, EASY WAY TO TEST VEGETABLE OILS

Bausch & Lomb
BUTYRO
Refractometer

Another highest-accuracy control instrument from the most complete line serving industry.

- **SPEEDS PRODUCTION!** Horizontal loading saves time and effort. Easy to clean. Faster readings: single eyepiece shows color-compensated dividing line *and* 0-100 range scale (ND 1.42-1.46).
- **PROTECTS PRODUCT QUALITY!** Accurate to 0.1 Butyro number. Correct readings assured by micrometer drum reading system, constant temperature control circulating system, contamination-proof design, and positive prism-liquid contact.
- **LOWERS CONTROL COSTS!** This low-priced instrument releases expensive full-range units for other jobs. Trouble-free design protects vital parts from heat, dust, fumes, stray liquids . . . ensures minimum maintenance, maximum use.



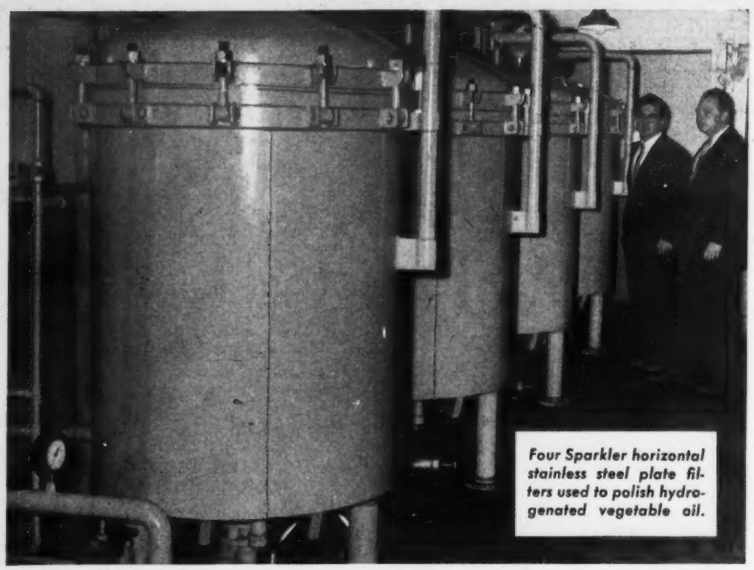
WRITE TODAY FOR COMPLETE INFORMATION

For your copy of Bulletin D-273, and for obligation-free demonstration, write Bausch & Lomb Optical Co., 60601 St. Paul Street, Rochester 2, New York.

BAUSCH & LOMB
SINCE 1853

America's only complete optical source . . . from glass to finished product.

When inquiring check FP 4377 opposite last page



Four Sparkler horizontal stainless steel plate filters used to polish hydrogenated vegetable oil.

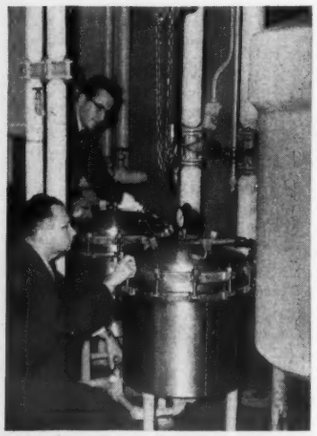
Clearer, purer hydrogenated vegetable oil obtained with

Sparkler Filters

SPARKLER horizontal plate FILTERS

At Mrs. Tucker's Foods in Sherman, Texas, four Sparkler 33" diameter horizontal stainless steel plate filters are used to polish hydrogenated vegetable oil after it has been deodorized. Several batches of oil are filtered before a change of filter media is needed.

But when changes are required at Mrs. Tucker's, clean plates are installed quickly in a most resourceful manner. A hoist simply lifts the filter plate cartridge through an opening in the floor above, a clean cartridge is lowered into the filter and the filter is back in operation in a matter of minutes.



Sparkler all stainless steel filters used in experimental laboratories.

This installation also employs two Sparkler all stainless steel filters, one to remove bleaching clay and the other to remove minute nickel catalysts from experimental batches of hydrogenated oil. This difficult separation of the nickel catalyst is accomplished through the use of Filtercel aid in the Sparkler filter.

Sparkler manufactures stainless steel filters in capacities up to 10,000 gallons per hour with completely accessible, easy to clean surfaces conforming to standard sanitary requirements in the food field. Special filters are engineered for special requirements. On your next food filtration application, consult with Sparkler.

Send your requirements to Mr. Eric Anderson for personal service.

Service Representatives in principal cities

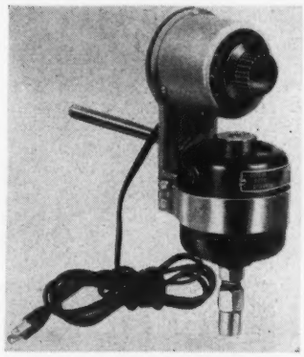
SPARKLER
MANUFACTURING CO.
MUNDELEIN, ILL.

Sparkler International Ltd. with plants in Canada, Holland, Italy and Australia. Filtration engineering and manufacturing exclusively for over 30 years.

When inquiring check FP 4378 opposite last page

Compact lab stirrer has variable speed

Stirrer measures 8" high (without paddle), and several used together can replace a more expensive multiple stirring unit. It is strong enough to agitate thoroughly more than 5 gal of water. Unit is priced at $22.50. Stirrer has a stainless steel collet-type chuck and a 1/100 hp motor. Variable speeds—to 5000 rpm—are possible by means of a rheostat; unit has a calibrated dial for duplicating speeds.



Stainless steel support rod allows stirrer to be clamped with a lab clamp holder

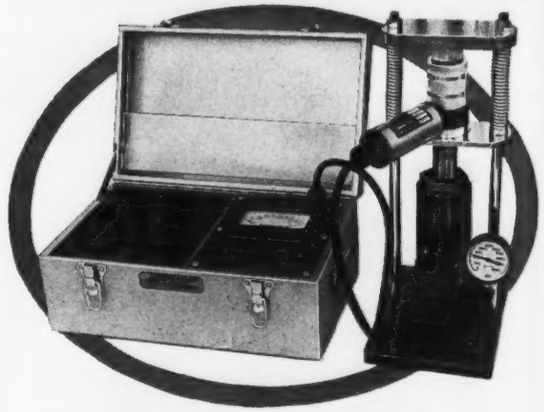
(Model #101 stirrer is a product of Talboys Instrument Corp., Dept. FP, 13 Ackerman Ave., Emerson, N. J. . . . or for more information check FP 4379 on form which is located opposite last page.)

Describes battery-operated, 2000-hr pH meter

Battery-operated pH meter using only three radio batteries and subminiature tubes for operation is described in bulletin. Battery life is 2000 hours. Unit can also be plugged into AC current. Produces reproduceable readings to 0.03 pH units.

Bul No. 118 is issued by Photovolt Corp., Dept. FP, 95 Madison Ave., New York 16, N.Y. When inquiring specify FP 4380 on form opp. last page.

Moisture Costs Money!



Save the high costs of too much or too little moisture! Measure moisture content quickly, economically with **Granular Moisture Register G5** – insure product uniformity and quality!

1 minute test! No stopping for time-consuming, expensive laboratory tests.

Accurate readings to 0% within close tolerances!

Use on production line! Voltage regulated electronic power supply, or battery operated. No skilled technicians required.

Two Weeks Free Trial! Test the G5 in your plant. No obligation. Satisfaction is guaranteed.

Guaranteed accuracy on these products!

Starches • Flours
Meals • Sugars • Feeds
Coffee • Yeast • Baking Mixes
Vegetable Oil Products • Cereals
Dry Grains • Dried Eggs • Dehydrated Foods
Walnuts • Parmesan Cheese
Dozens more powdered or granular materials, including many chemicals.

ELECTRONIC MOISTURE REGISTER *Instruments*
Dept. FPA, 1510 W. Chestnut St., Alhambra, Calif.

☐ *We are interested in 2 weeks free trial offer. Send additional information regarding Model G5.*
We will want to test _____
in a moisture range from _____ % *to* _____ %.
Firm Name _____
By _____ **Title** _____
Address _____
City _____ **State** _____

When inquiring check FP 4381 opposite last page

Electronic Color 'Expert'

(*Continued from page 92*)

product. In order to cancel out the effect of particle sizes, the product is first ground in a standard lab grinder. The ground cereal is shaken for two minutes, and the screenings which pass a USS No. 35 screen and collect on a No. 40 screen are used.

A layer of the screened and ground product is then placed in a lucite container, and the color is "read" by the color instrument. This instrument measures the color in terms of reflectance in selected spectral regions. A neon, or mercury gas-discharge, tube is the light source.

Calibration consists of measuring two colored plastic discs—one a little darker than the cereal under test, the other a little lighter. By adjusting zero on the darker disc and 100 for the lighter disc, the full range encountered in the product is bracketed. This adjustment takes less than a minute. Once adjusted, the sample is merely placed in the chamber, and the color intensity read directly from the scale.

Color standardization has changed from a complex, highly subjective factor to a simple matter of reading and recording a scale. Objective records now show immediately any slight color variation, allowing plant variable to be adjusted at time of the change. This helps ease the job of day-to-day, in-plant control, as well as insuring that variation does not exist among different plants for the same product.

No charts, graphs, or mathematical computations are necessary to read the instrument. Component parts are available at most radio repair shops, and repair is relatively simple. The instrument is sealed against dust and moisture, and can be located in the processing area. It contains a voltage stabilized circuit, so that no additional equipment is necessary to put it in operation—plug it into a standard line.

This instrument was originally designed for the USDA for tomato grading experiments. It has had three years of field use in such work, and has found application in a variety of other food plant work.

(Model "F" Agtron color measuring instrument is a development of Magnuson Engineers, 509 Emory St., San Jose 10, Calif., and is manufactured by Agtron, Inc., Dept. FP, 7526 S.W. Macadam Ave., Portland 1, Ore. Check FP 4382 opposite last page.)

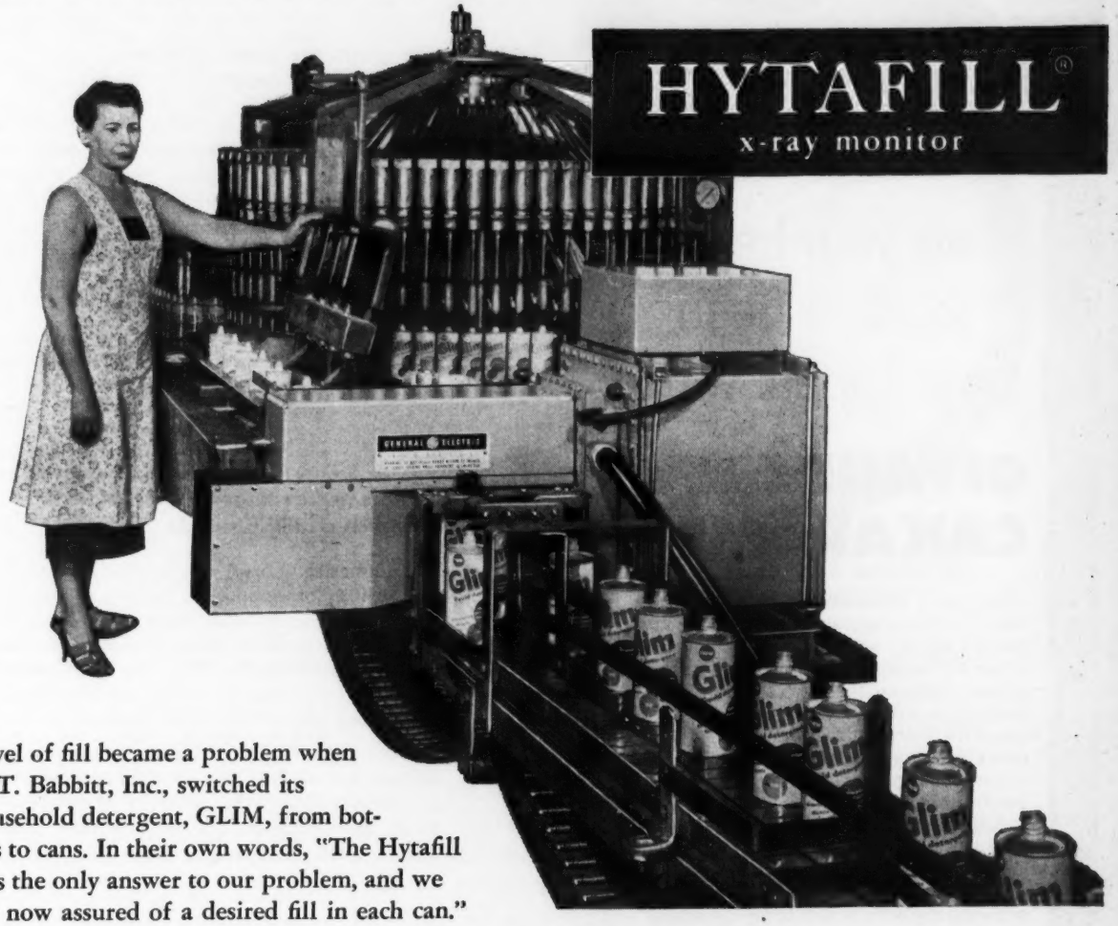
Shows air conditioners for laboratories

Booklet of 16 pages describes laboratory apparatus and equipment. Mobile air conditioners, liquid coolers, flexible heating tapes are included.

Digest No. 3 is issued by A. Daigger & Co., Dept. FP, 159 W. Kinzie Ave., Chicago 10, Ill. Specify FP 4383 opposite last page.

household detergent goes to cans...

exact measure assured with General Electric



Level of fill became a problem when B. T. Babbitt, Inc., switched its household detergent, GLIM, from bottles to cans. In their own words, "The Hytafill was the only answer to our problem, and we are now assured of a desired fill in each can."

IF you package liquids or free-flowing solids in opaque containers, you need HYTAFILL. Unit inspects every container that passes along the line for both over and under fill . . . is capable of checking up to 900 containers a minute.

Easy-to-install HYTAFILL is compact . . . readily adaptable to your existing conveyor lines. It requires no special care—sealed tube head and detector can both be washed with steam or hot water. Control panel may be positioned anywhere within 50 ft of the conveyor line.

For full details on this modern quality control unit call your nearest G-E X-Ray representative . . . or write X-Ray Department, General Electric Company, Milwaukee 1, Wisconsin, requesting Pub. BC14.

Progress Is Our Most Important Product

GENERAL ELECTRIC

MANUFACTURERS OF THE ONLY COMPLETE X-RAY LINE

When inquiring check FP 4384 opposite last page

WHITE CAKE MIX
CHOCOLATE CAKE MIX
SPICE CAKE MIX
Give your baked goods a fresh new appeal with
GIVAUDAN'S CAKAROMES*
Givaudan's Cakarome concentrates are widely favored among leading bakers and baker's supply houses, for they both enhance and complement true bakery flavor appeal. Offering the highest quality and strength available, Cakaromes are produced in imitation almond, coffee cake, sweet dough, spice cake, pound cake, imitation butter and a large variety of other oven-tested flavors.
Among the many Givaudan flavor products unanimously approved by bakers are flavor bases, citrus oils, fruit extracts for icings, frostings and fillings and such outstanding developments as Permaseal* Flavor Crystals, which provide unique new advantages for many uses.
Our laboratory staff will gladly help you solve your bakery flavor problems.
*Trade-mark
Givaudan Flavors Inc.
330 West 42nd St., New York 36, N. Y.
Branches: Philadelphia • Boston • Cincinnati • Detroit
Chicago • Atlanta • Seattle • Los Angeles • Toronto

When inquiring check FP 4385 opposite last page

NEW LITERATURE

Reviews of books and industrial bulletins describing equipment, supplies, services

Waste guide for meat industry covers reduction, treatment

Twelve-page booklet is intended as guide for operating and design personnel concerned with waste in the meat industry. Subjects discussed include sources and quantity of wastes, character of wastes, pollution effects, remedial measures. Data presented in tables serve to illustrate text.

Public Health Service Publication No. 386, "An Industrial Waste Guide to the Meat Industry", can be obtained by remitting 15c direct to Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.

QM offers proceedings of symposium on dry whole milk products

Quartermaster Corps has recently published proceedings of symposium on dry whole milk held in September, 1954. Papers review progress in this field to date, discuss avenues of future research. Topics discussed include flavor aspects, chemical properties and changes, manufacture (including paper on fundamentals of spray drying), and dispersibility.

Proceedings of Dry Whole Milk symposium are available without charge from Quartermaster Food & Container Institute for the Armed Forces, 1819 W. Pershing Rd., Chicago 9, Ill.

Technical AMIF bulletin covers histology of pork casings

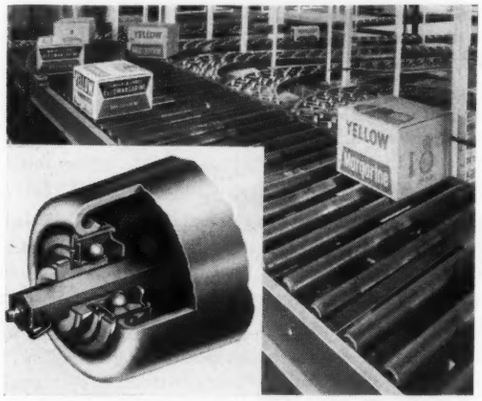
Basic research work on histology of hog intestines is presented in 24-page booklet. Some of conclusions reached as result of this work: Hog intestine is similar to beef intestine in basic structure and composition; hog small intestine makes best casing chiefly because of low fat content; general superiority of hog casing over beef is attributed to more homogenous structural characteristics.

Booklet is well-illustrated with photomicrographs showing typical sections of the intestine. Short description of intestine processing methods, plus materials and methods used in study are included.

Bul No. 25, "Histology of Pork Casings", is issued by American Meat Institute Foundation, Dept. FP, 939 E. 57th St., Chicago 37, Ill. When inquiring specify FP 4386 opposite last page.

Roller conveyors feature bearings that are grease-packed for life

New illustrated catalog contains 20 pages of data and specifications on a complete line of medium- and heavy-duty roller conveyors. Detailed cutaway views show design features of the grease-packed-for-life bearings with true labyrinth metal seal as well as integral ball and plain bearings. The rounded ends, turned-in ends, swaged, and reamed straight ends of



Inset shows one type of ball bearing described

rollers are shown in angle frames, formed, or structural channel frames. Charts give roller and frame capacities.

Heavy-duty-type mobile unit for straight sections of roller conveyor is illustrated, also roller curves, spur sections, sliding switches, converging sections, vertical lift, and horizontal gate sections in permanent and portable types.

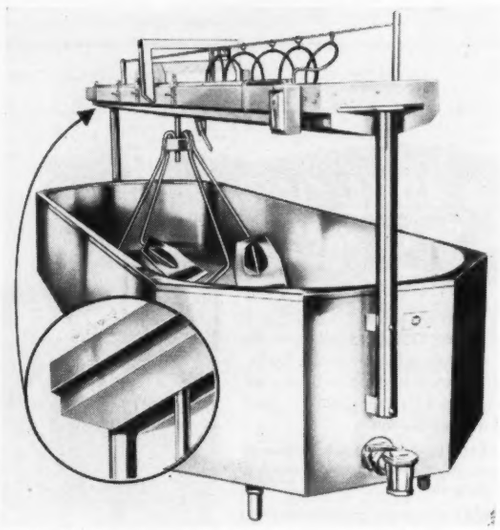
Cat 60A is issued by E. W. Buschman & Co., Inc., Dept. FP, Clifton & Spring Grove Aves., Cincinnati 2, Ohio. When inquiring specify FP 4387 on form opposite last page.

How sanding units stop skids, save tires explained in illustrated bulletin

Four-page, two-color illustrated bulletin describes number of highway truck sanders which prevent skids and reduce stopping distances up to 40% on icy highways. Sanders are controlled from aircraft-type switch on dash. When grit level drops below one-third capacity, a red light flashes on dash. Specially prepared grit for use in these sanders provides free, non-freezing action. Units are completely assembled when shipped for easy installation.

Bul on Napco Elston Sanders is issued by Highway Safety Appliances Div., Napco Industries, Inc., Dept. FP, Minneapolis 11, Minn. When inquiring about manufacturer's product reader may simply specify FP 4388 on form opposite last page.

Cheese forker-agitator features all-around protective housing



Stainless steel construction plus complete housing assures maximum sanitation in forker

Only turning shaft projects through protective housing of forker-agitator for cheese vats. This housing assures that no foreign material can drop into vat. Unit is mounted on vat itself, providing full access to vat and making cleaning easier. Four paddle styles are available to accommodate most requirements.

Literature describing Model DL Forker and Agitator can be obtained from Kusel Dairy Equipment Co., Dept. FP, Watertown, Wis. When inquiring specify FP 4389 on form opposite last page.

THE UNIQUENESS OF DIATOMITE FILTERAIDS

Paul W. Leppla, Technical Director

The purpose of a filteraid is to sieve out suspended solids without plugging. Therefore, it follows that the porosity of the filter cake is an important characteristic. This is one of the several properties possessed by filteraids produced from diatomite (diatomaceous earth or DE) to a remarkable degree. Actually, diatomite filteraids form filter cakes consisting largely of space, since 85-90% of the volume of the cake is void space and unlike filteraids produced from cellular materials, almost all of the void space is available or useful.

Fine powders of siliceous materials often pack into a bed in such a fashion that the percentage of voids is close to 25%. Thus, 100 pounds of silica in the form of sand occupies about one cubic foot and provides 0.25 cubic foot void space.

In contrast, 100 pounds of processed diatomite filteraid develops over five cubic feet of filter cake, and provides about 4.5 cubic feet of void space for filterable solids. Diatomite filteraids thus offer 18 times the solids retention capacity of an equal weight of sand.

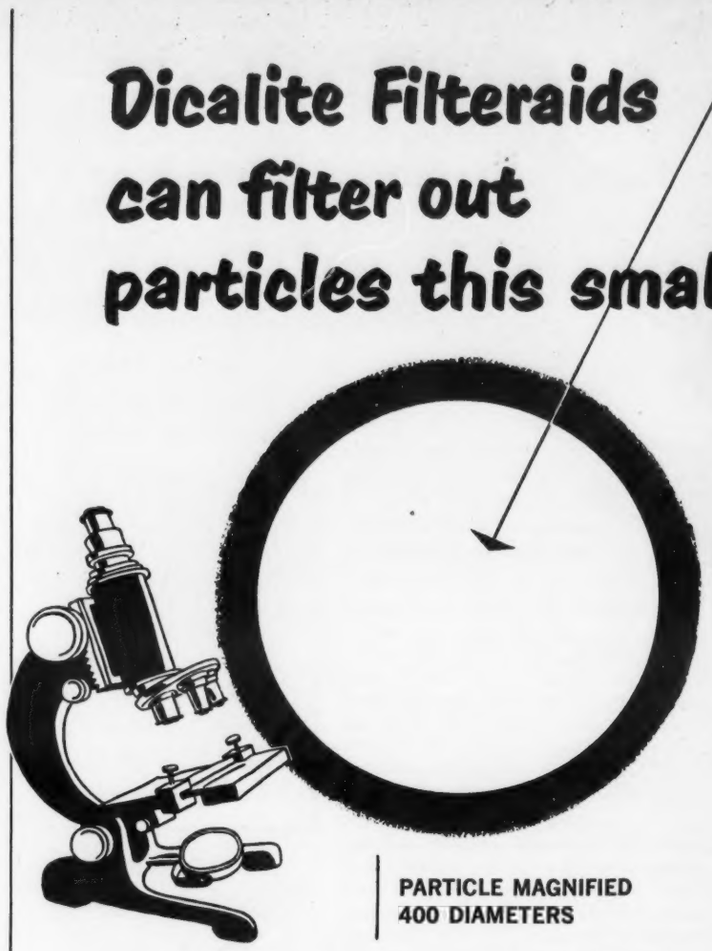
Let's calculate the theoretical filtration capacity of the two materials, using the assumption that filtration will proceed until the voids are completely plugged. Actually, this ideal case is never achieved, but the comparison between the two materials will still be valid.

If the liquid to be filtered contains 1% suspended solids by volume, the sand bed will filter 188 gallons before the void space is completely filled. The same weight of diatomite filteraid will filter 3,400 gallons on the same basis.

As a first approximation, or filteraid rule-of-thumb, the filtration engineer, lacking actual test data, will recommend the addition of diatomite filteraid at the same percentage as that of the suspended matter to be removed. On this basis, it is seen that the hypothetical liquor containing 1% matter as described above should require 1% filteraid. Our calculation shows 100 lbs. diatomite to 3,400 gallons of filtrate, or 0.37%. In plant practice, filteraid dosage often is well below the rule-of-thumb recommendation. This provides convincing evidence for the statement that nearly all the void volume in diatomite filter cakes is available or useful.

From time to time in the past, materials other than diatomite have been introduced as filteraids, often on the mistaken basis that low bulk density is the principal property required for success. The list of materials upon which ambitious plans have been made and have failed is long. A few filteraid adjuncts having special properties find limited utility in the process industries, but diatomite continues to be the outstanding raw material for filteraid manufacture.

Dicalite Filteraids can filter out particles this small!



PARTICLE MAGNIFIED 400 DIAMETERS

That's right—you can't see it, even when magnified 400 times. The eye can detect, at 10″ distance, a particle 80 microns in size; hence, we're talking about particles smaller than .2 micron, down below the wave-length of visible light.

And Dicalite Filteraids are trapping and filtering out smaller particles than that, particles as small as .137 micron, particles visible only with the ultra-microscope or the electron microscope. Which explains why Dicalite Filteraids are so widely used in so many processes where thorough separation is imperative for purity and clarity. Write for further information.

Dependable GLC GREAT LAKES Dicalite® DIATOMACEOUS MATERIALS

DICALITE DIVISION • GREAT LAKES CARBON CORPORATION, 612 SOUTH FLOWER STREET, LOS ANGELES 17, CALIFORNIA

When inquiring check FP 4390 opposite last page

CAMPBELL **VACUUM PACK**
MEAT AND FOOD WRAPPER
PAYS FOR ITSELF IN LESS THAN
SIX MONTHS TIME ON JUST
MATERIAL & LABOR SAVINGS!

Fast, automatic CAMPBELL wrapper saves up to 60% on vacuum drawing packaging films and materials

No question about it — the CAMPBELL Vacuum-Pak's simplified one person operation; its close-fitting vacuum drawn wrap which requires no trays or stiffeners, *unless desired* — ACTUALLY saves enough money on materials and labor alone over competitive methods to *pay for itself in 4 to 6 months time!* In addition, the product's tight wrap minimizes puncture risk and is *vacuum guaranteed.*

Used by America's leading packers, this ingenious automatic vacuum wrapper packages sliced luncheon meats, bacon, chops, patties, wieners, cheese and other food products with equal ease and speed. Simple adjustments require minimum down-time for product change-over. Get complete cost and production facts today.

POSITIVE *Guaranteed* SEALING

- 98% of packages positively sealed and guaranteed.
- Vacuum drawn wrap eliminates shrinkage, flavor and color loss.
- Tremendous savings in wrap materials and labor.
- Delivers 40 to 70 Units per minute
- Extends product's shelf life—reduces spoilage and returns.
- Close wrap reduces puncture risk.

Less than 2% package "Leakers"

It is hereby guaranteed that out of every 100 units Vacuum-packed on a CAMPBELL Vacuum Pack Meat and Food Wrapper in regular production service — 98% or more will be positively sealed against leakage at sealing areas of heat-sealing wrapping material used for the package.

HUDSON-SHARP MACHINE CO.
GREEN BAY, WISCONSIN

GET THIS FREE BROCHURE

There's a Campbell Wrapper for packaging hundreds of fresh and frozen food items. Write for full colored descriptive brochure today on your company letterhead.

NEW... *Campbell-Pak*

Another first — converts roll stock to low cost filled and heat sealed bags for manual or automatic sequence packaging of liver, brains, kidneys, tongue, kraut, cheese and other products. Write for descriptive literature on this *entirely new method* packaging machine.

Campbell
WRAPPER
HUDSON-SHARP MACHINE CO. • GREEN BAY, WIS.

Manufacturers of Aniline and Gravure Presses, Folders, Interfolders, Laminators, Waxers, Embossers, Slitters, Sheeters, Roll Winders, Packaging Machines, Crepers and Tissue Converting Units.

When inquiring check FP 4391 opposite last page

new literature

Tell advantages of export markets

Reprint of article written by James Plesser, president of the Hamos Co., manufacturers' export representatives, points up advantages which can be realized by utilizing export markets. Production for export is growing in this country, currently amounts to $13 billion/yr, although this figure represents only 3% of total output.

"Increase Sales Without Extra Cost" can be obtained from the Hamos Co., Dept. FP, 332 W. 21st St., New York 11, N.Y. When inquiring specify FP 4392 on form opp. last page.

Describes properties, uses of gluconic acid cleanser

Technical bulletin outlines properties and uses of gluconic acid and its derivatives. Acid is presently used in food field as cleaning agent in dairies and breweries. Bulletin includes charts, reactions, assay information, and specifications.

Tech Bul No. 33 is issued by Chas. Pfizer & Co., Inc., Dept. FP, 630 Flushing Ave., Brooklyn 6, N.Y. When inquiring specify FP 4393 on form opposite last page.

Gives facts on seven models of piston fillers

Data on seven models of manufacturer's positive displacement fillers, used for liquids and certain solids-types foods are given in 16-page booklet. Chart shows adaptability of fillers and attachments to 46 products, including chop suey, dog food, chopped horse meat, lard, and scrapple.

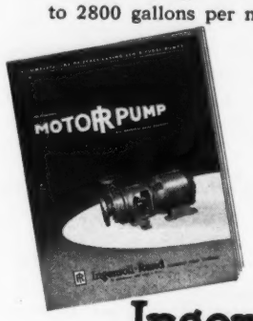
"M&S Fillers by FMC" booklet is published by Food Machinery & Chemical Corp., Canning Machinery Div., Dept. FP, San Jose 8, Calif. Specify FP 4394 opposite last page.

Are Your Pumps Dependable?

Dependability of your pumps may mean the difference between uninterrupted production and complete shutdown. You cannot afford shutdowns due to mechanical failure in your pumping system. Switch to Ingersoll-Rand MOTORPUMPS for more dependability.

MOTORPUMPS mount in any position and require no special foundation. Select the right units for your job from the most complete line of space-saving centrifugal pumps manufactured. Write for our new Bulletin on this line from ¼ through 75 horsepower . . . capacities to 2800 gallons per minute . . . heads to 650 feet. Prompt shipment from either factory or branch stock.

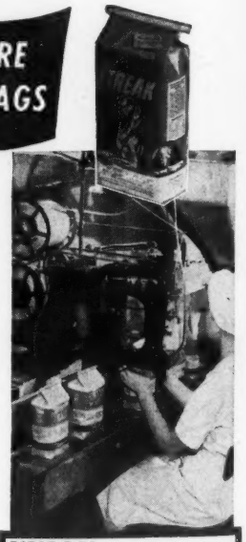
We can help you with any size pumping problem with units to 4000 horsepower.



Ingersoll-Rand
9-160 ▼ 11 Broadway, New York 4, N. Y.

When inquiring check FP 4395 opposite last page

A BETTER CLOSURE for SMALL PAPER BAGS



UNION SPECIAL'S Style 60000 D bag closing machine, producing the exclusive Dubl-Tape closure, is designed to speed packaging . . . cut costs . . . and improve appearance.

- **FAST—Speed to match output of standard filling and weighing equipment.**
- **NEAT—Produces an eye-pleasing, sales-stimulating package with high merchandising value.**
- **ECONOMICAL—Operating cost per bag is at a minimum . . . uses inexpensive cotton thread and paper tape.**
- **VERSATILE—Adjustable for a wide range of bag sizes, short or long runs.**

Write for BULLETIN No. 100 to get the complete facts on this machine . . . and how it can do a better closing job for you.

Union Special MACHINE COMPANY
432 N. Franklin Street • Chicago 10, Illinois

When inquiring check FP 4396 opposite last page

Why di?

It doesn't make economic sense. Particularly when *di*glycerides are relatively less effective as emulsifiers in shortening and margarine than are *mono*glycerides.

You get mostly monoglycerides in Myverol® Distilled Monoglycerides. This comes about through molecular distillation, a process unique with us, which removes di- and triglycerides from reaction mixtures you would otherwise be buying as your emulsifier. Naturally, this costs a little more, but the difference is more than made up for by the fact that you get a lot more emulsification per pound of emulsifier.

You find, too, that Myverol gives you a "cleaner" consumer or commercial product to boot. For molecular distillation produces a monoglyceride that is without catalyst and very low in free fatty acid and glycerine.

So far so good. Now find out how little Myverol Distilled Monoglyceride is enough for the kind and degree of emulsification you want. We'll work with you in finding the answer. You get started by writing to ***Distillation Products Industries,*** Rochester 3, N. Y. Sales offices: New York, Chicago, and Memphis • W. M. Gillies and Company, Los Angeles, Portland, and San Francisco • Charles Albert Smith Limited, Montreal and Toronto.

distillers of monoglycerides made from natural fats and oils

DPi

Also . . . vitamins A and E

Distillation Products Industries
is a division of **Eastman Kodak Company**

When inquiring check FP 4397 opposite last page

new literature

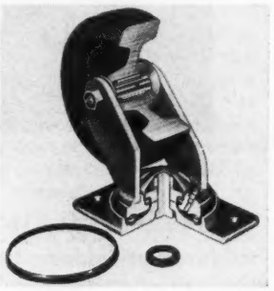
Lightweight hand truck has tubular magnesium and steel construction

Hand truck featuring magnesium and tubular steel construction for strength and durability is described in pocket-size folder. It is furnished with curved top design or with center handle and three cross bars. There are only four bolts in entire assembly, and all parts are replaceable.

Folder on tubular magnesium and steel truck is issued by Moellenbrock & Wilke Inc., Dept. FP, 204 Jefferson St., Washington, Mo. When inquiring specify FP 4398 on convenient Reader Service slip opp. last page.

Provide "sanitary" casters for food plants

A new type seal has been developed to provide a "sanitary" caster suitable in food plant operations. Design details are shown in illustrated 4-page bulletin. This caster



Precision-moulded seals prevent lubricant from escaping and foreign matter from entering

eliminates the need for periodic maintenance due to grease loss, dirt, or water entering the moving parts.

"New Sealed Casters" (Bul 2093) is issued by Albion Industries, Inc., Dept. FP, Albion, Mich. When inquiring specify FP 4399 on convenient Reader Service slip which is located opposite last page.

What's your **LINE...**

canning? bottling? packaging?

If you operate **ONE** *or* **100** *lines you need this completely*

NEW

ELECTRIC COUNTING SYSTEM

Outlasts any previous system

10 to ONE

The Contactor is gear-reduced to count ten cans or bottles for each contact . . . assuring ten times the life for both Contactor and Counter. The switch is entirely sealed against moisture, juices, and dirt.

PAYS FOR ITSELF

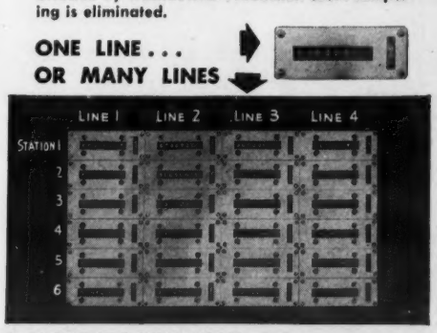
- Lower Maintenance
- Saving in Reading Time
- Closer Production Control
- Minimum of Supervision

PLANT TESTED

One manufacturer has counted 104,445,684 cans; the accuracy was 100%. The same counter and switch are continuing today, giving accurate production count.

The Model E-S-5-X Contactor mounted on the line is the actuator for centralized 6-Y-1-MF electric counters. Production from any point can instantly be determined by a glance at the control panel. The completely rustproof Contactor is unaffected by washdowns. Production count tampering is eliminated.

ONE LINE . . . OR MANY LINES



Send for Bulletin E-S-5-X

DURANT MANUFACTURING CO.
1951 N. Buffum St., Milwaukee 1, Wis. • 151 S. Water St., Providence 3, R.I.
Representatives in Principal Cities

PRODUCTIMETERS
SINCE 1879 *Count Everything*

When inquiring check FP 4400 opposite last page

THE **HydroLectric** LIFT TRUCK

pays for itself . . .
with the savings it makes

- 2 Drive Wheels instead of one
- 2 Braking Systems available instead of one
- 4 Wheel Stability instead of three
- Alloy Gear Transmission instead of chains
- 100% more Steering Ease—Greater Maneuverability
- 50% less Maintenance—Easy Accessibility
- Finger-Tip Control—Greater Safety

The ease of operation, speed, safety, power and economy of Hydrolectrics, users report, make it possible for them to pay for themselves *five* to *twelve* times per year.

The exclusive Hydrolectric modern features give you top performance day in and day out the year around, which today's material handling requires, at the lowest cost.

Write for complete information today!

STUEBING Designed • Engineered • Built

LIFT TRUCKS, INC. / CINCINNATI 14, OHIO

THERE IS A TRUCK FOR EVERY PURPOSE TO HANDLE ANY KIND OF MATERIAL.

When inquiring check FP 4401 opposite last page

PROCESS PACK SHIP

whatever the job . . .

LA PORTE FLEXIBLE STEEL CONVEYOR BELTING

does a better job!

A shot in the arm for every food handling operation from loading hopper to shipping, versatile La Porte conveyor belting gives top performance with minimum maintenance and repair.

Rugged galvanized steel construction for longer service. Open mesh feature permits easier sterilizing with steam or scalding water—allows circulation of air or liquids around products in process . . . and prevents fruits, vegetables and other products from rolling off.

Stretch-free FLEXIBILITY eliminates jump or slippage that wears belt edges and pulley stands. Provides perfectly flat, silk-smooth ride for containers empty or full. Choose La Porte for tops in performance—and *dependability*.

LA PORTE

Write TODAY for illustrated literature, prices.

MAT AND MFG. CO.

BOX 124 Dept. A **La Porte, Indiana**

When inquiring check FP 4402 opposite last page

BEFORE:
After pruning, branches and brush are piled in rows between peach trees. Some of the branches are 3 to 4 inches in diameter

AFTER:
Following shredder's pass down the row, all branches are finely chopped up and ready to be disced into the soil by roto-shredder

Fast reduction of brush piles, with minimum hand labor, achieved at Calpak with machine that

'chews up' orchard branches

Two methods are commonly used to rid orchards of branches and twigs after trees are pruned. One is the use of traveling incinerators, the other to rake trash to the edge of the orchard and set a bonfire. Neither method makes efficient use of labor, nor do they restore anything to the soil.

At California Packing Corporation's Sutter Ranch, the branches from peach trees are shredded and plowed back into the soil. A cylinder-type roto-shredder, while being drawn through the orchard, beats and "chews up" the prunings whether large or small. The two-wheel shredder uses 15" automotive wheels and is driven from a tractor's power-take-off shaft. Shear pins protect the steel flails from

The shredding machine is pulled over the ground by a tractor while flails chew up the brush. Flails are attached to a horizontal shaft which revolves under direct power from the tractor

accidental or severe shock loads. Since they are individually mounted, these flails can be easily replaced when necessary.

Result of this mechanization, according to Calpak's Land Department executives, is fast reduction of brush piles with a minimum of hand labor, plus the added advantage of returning the shredded "organic" matter to the soil. Savings in labor alone have already paid back the shredder's initial cost.

(Cylinder-type roto-shredder is manufactured by Oppel Harvester Co., Dept. FP, 5th & Front Sts., Boise, Ida. . . . or for more information check FP 4403 on form opposite last page.)

To irrigate or not to irrigate?
Soil moisture meter has answer

Completely accurate indication of when irrigation is needed or when it should be discontinued is provided by a meter that makes use of a porous ceramic cup and special vacuum gage. These connect with a tube so that the unit can be completely filled with air-free water.

When placed in the soil, the gage continuously indicates condition of the soil water. Instrument's operating method is simple. When soil is wet and pore spaces are filled, the pressure is nearly the same as that of the atmosphere and gage reading is zero. As soil dries, a vacuum pressure is registered on gage and water is said to be under tension. Hence, the lower the reading the higher the water content.

(Lark soil moisture tensiometer is made by Irrigation Engineering Co., Div. Instrument Development & Mfg. Corp., Dept. FP, 3018 E. Foothill Blvd., Pasadena, Calif. . . . or for more information check FP 4404 on form opposite last page.)

When You Need a Kettle Quick!

HAMILTON

New Style **C** *Tilting Kettle*

Demands for fast delivery pose no problem at Hamilton. Realizing that last minute changes in our customers' production schedules create an immediate need for additional equipment, we carry most of our standard kettles and mix cookers in stock—ready for prompt shipment.

One of our standard items is the new Hamilton Style C Hand Tilting Kettle with positive-lock tilting device. Made of stainless steel, full two-thirds jacketed. 20 to 60 gallon capacities. Kettle design provides fast, even cooking. New streamlined leg construction gives maximum support and eliminates crevices where trouble-breeding dirt and food particles normally collect.

Other types of equipment readily available include mix cookers, pressure cookers, vacuum kettles. When you need a kettle *quick* call, wire or write Hamilton—for prompt estimate and delivery information.

HAMILTON Copper and Brass Works

Division of Brighton Copper Works, 826 State Avenue, Cincinnati 4, Ohio

When inquiring check FP 4405 opposite last page

for Food Processing Advertisers★

The emblem at right is that of NBP—National Business Publications. You've probably seen it before on our contents page . . . rate card . . or heading the FOOD PROCESSING listing in Standard Rate & Data. Because we're proud of it.

It signifies that FOOD PROCESSING has qualified for membership in the largest association of technical, scientific and professional journals in the United States. (We're proud, too, that our F. P. executive staff includes a past president of NBP and a member of its Board of Directors.)

But belonging to NBP is more than a feather in our publishing cap. It's an important *plus* for every advertiser in FOOD PROCESSING. Here are the membership requirements. Judge for yourself:

- **Unbiased editorial content**
- **Periodic reader interest evaluation**
- **Non acceptance of questionable advertising**
- **Periodic audit of circulation**
- **Uniform rates to all advertisers**

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NBP

Food Processing

For men who manage the Food Processing Industries

Published by Putman Publishing Company

Creators of PUTMAN-STYLE Magazines
. . . terse, vital editorial; "hand-picked" circulation; square, high-visiblity format; quality readership; hence more READER ACTION

BPA NBP

PUTMAN PP PUBLISHING

★ Courtesy of the publication MEDICAL ECONOMICS, creator of this copy, here adapted to FOOD PROCESSING

Seed treatment with antibiotic provided effective in tests

Attacks number of plant fungi, but reported safe for diseased plants

A new antibiotic, named filipin, is expected to be valuable for seed treatment and control of foliage diseases.

According to investigators, tomato seeds and pea seeds soaked in solution received protection from common seed rotting diseases. They also report that grey leaf spot, a semi-tropical blight of the tomato plant, can be partially controlled with a spray of crude filipin.

Among the microorganisms causing plant diseases which are said to be inhibited by filipin are: Aspergillus niger, Colletotrichum, Dendrophoma obscurans, Endothia parasitica, Fusarium oxysporum dianthi, Gnomia fragariae, Helminthosporium sativum, Penicillium digitatum, Phoma betae, Phomopsis, Sclerotinia sclerotiorium and Thielaviopsis.

(Work on filipin was conducted jointly by the Horticulture and Chemistry Departments of the University of Illinois and The Upjohn Co., Dept. FP, Kalamazoo, Mich. . . . or for more information check FP 4406 on form opposite last page.)

USDA tests "systemic" chemicals for better pest control

USDA investigations of "systemic" chemicals (substances exhibiting ability to be translocated from one part of a plant to another) may lead to improved pest control materials and practices. One new systemic chemical studied is MOPA (alpha methoxyphenyllacetic acid).

Experiments by USDA scientist John W. Mitchell and coworkers have revealed that MOPA applied to plant leaves or stems is absorbed and translocated both upward and downward inside the plant. With the help of soil moisture, this chemical can even move from the roots of a treated plant into those of an adjacent untreated plant. So far MOPA itself has not shown any pesticidal properties.

If a chemical that will protect against diseases, insects, or nematodes without harm to the plant could be mobile within the plant, like MOPA, agriculture might have a great new control method. Most insecticides or fungicides now used have little effective systemic action.

(MOPA is available from Polynitro Chemical Co., Dept. FP, Box 374, College Park, Md., or from Monroe Chemical Co., Dept. FP, Box 507, Dunbar, W. Va. . . . or for more information check FP 4407 on form opposite last page.)

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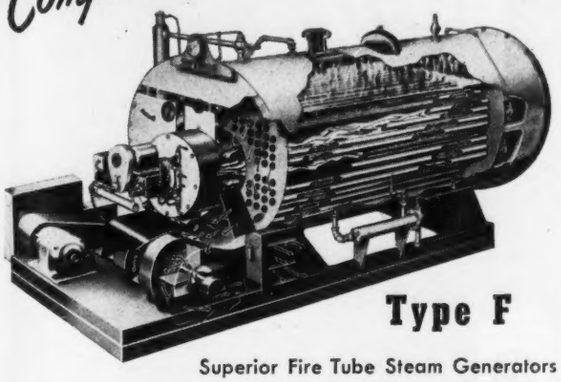

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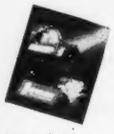

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TIMES TOWER, TIMES SQUARE, NEW YORK 36, N.Y.

SUPERIOR STEAM GENERATORS

When inquiring check FP 4408 opposite last page

Five times faster cleaning

A Pantex Speedylectric Steam-Jet Cleaner lets one man do the work of five. High pressure jet of "dry" steam and solvents quickly removes grease and dirt accumulations from machines and equipment *without* flooding floors. No need to stop nearby production or move machines outside. Completely safe and portable (operates on 220, 440, or 550v.), the Speedylectric utilizes the electrode principle, the simplest, lowest cost method of generating steam electrically . . . no coils, tubes or electric heating elements to scale or burn out, no flames or fumes, no fire or explosion hazards. It's the fast, safe equipment for in-plant cleaning. Get latest Bulletins, write:

Pantex MANUFACTURING CORPORATION
Box 660K Pawtucket, Rhode Island

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crop production

Thorough coverage of aqua ammonia

Six-page technical data sheet, punched for notebook insertion, gives thorough coverage of information available on aqua ammonia. Eight detailed tables cover its physical properties, and two pages of text describe handling, toxicity, and first aid.

TDS No. 4 is issued by Agricultural Chemicals Sales Dept., Commercial Solvents Corp., Dept. FP, 260 Madison Ave., New York 16, N.Y. Specify FP 4410 opposite last page.

Farm equipment speedometer provides acreage checks

Application control for such jobs as spraying, planting, fertilizing and harvesting is provided by speedometer which can be attached to all types of farm equipment. Unit registers all speeds from 0 to 10 mph, in tenths and hundredths of a mile. Totalizer reads up to 10,000 miles. Speedometer can be used to run on ground or off a smooth tire. Drawbar hitch is included.

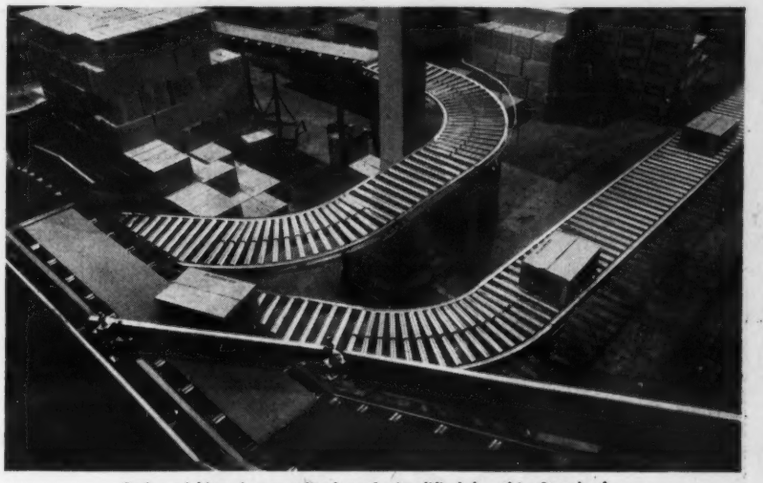
(Speedometer is made by Kromer Co., Dept. FP, 1120 Emerson Ave., N., Minneapolis 11, Minn. . . . or check FP 4411 opp. last page.)

Report on 11-year treatment of 10 vegetable seeds

Seed treatment tests conducted during the past 11 years are detailed in 48-page bulletin. Forty-one chemical pesticides were used in experiments with dry beans, limas, snap beans, beets, carrots, crucifers, cucurbits, peas, peppers, spinach, sweet corn, and tomatoes. Besides protecting seeds from decay organisms, seedlings of some of these crops were protected from preemergence damping-off.

"Protectant Seed Treatment for Vegetable Processing Crops", (Bul 771) by J.J. Natti and W.T. Schroeder is issued by New York State Agr. Station, Geneva, N.Y.

Ask Standard ⋮ *how to cut costs with conveyors*



Order picking is expedited and simplified by this Standard system of roller and belt conveyors in large warehouse.

Roller and belt conveyors ease warehouse traffic jams

FAST flow of goods and simplified labor add up to more profitable warehouse operations.

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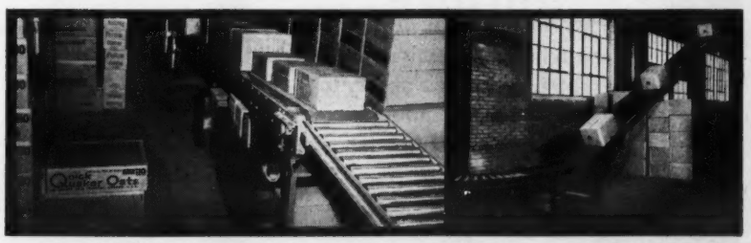
Spend a few moments with a Standard engineer. He'll show you how inexpensive Standard conveyors give you maximum flexibility at minimum cost. He'll show you, too, how Standard conveyors provide the many advantages of a custom-designed system at low cost. For the name of your nearby Standard engineer write STANDARD CONVEYOR COMPANY, General Offices: North St. Paul 9, Minn. Sales and Service in Principal Cities.



Write for Bulletin. Q-1. Better still, contact the Standard engineer listed in your classified phone book.

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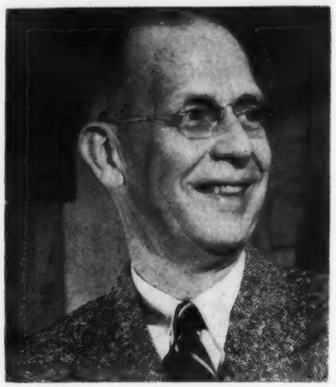
The View Ahead

(*Continued from page* 22)



Presidential campaign spells prosperous conditions for '56

By **CHARLES P. McCORMICK**
President
McCormick & Co., Inc.

Setting one's self up as a prophet or business oracle is always dangerous. It means going out on the end of a limb which can be sawed off by completely unforeseen circumstances as unpredictable as a hurricane.

But there are trends and conditions to which we have access in estimating what is likely to occur, all things being equal. For instance, we know 1956 is a Presidential election year, and the atmosphere will be charged with political propaganda, both true and false.

Politics, therefore, will be the key to the economic picture. Currently, the nation's economy is stable, employment is steady, and wages are holding firm. On the political front the "outs" will be seeking to displace the "ins", and the "ins" will be determined to hold off the attack. All of which should make for a prosperous '56, because it is only expedient for both sides to make every effort to hold the line. The next twelve months could turn out to be even better than '55.

Continuing mergers of retail outlets may cause temporary dislocations in some areas for both the manufacturer and the retailer, pending a period of readjustment. Whether profits will be in proportion to volume next year is something that another type of soothsayer will have to divulge. Our markets for sales should continue to expand, but it is quite likely the profit margins will shrink. All in all, however, we hope to push on in 1956.

look for the symbol of the RETORT

YOUR GUARANTEE OF MATCHLESS QUALITY, PURITY, UNIFORMITY

Behind the symbol of the Retort stands three generations of family pride and "know-how" in Essential Aromatics, natural and synthetic flavors, perfumer's specialties. Made in the West's most modern plant. The Retort is your guide to dependability.

F. Ritter & Co.
Los Angeles 39, California
Branch Offices in Principal Cities

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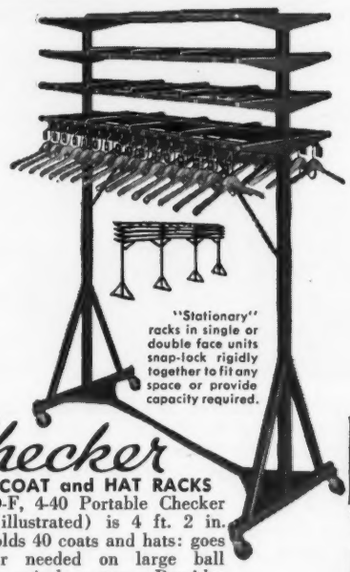

"Stationary" racks in single or double face units snap-lock rigidly together to fit any space or provide capacity required.

Checker COAT and HAT RACKS

Style D-F, 4-40 Portable Checker Rack (illustrated) is 4 ft. 2 in. long, holds 40 coats and hats: goes wherever needed on large ball bearing swivel casters. Provides sanitary method for holding wraps exposed to air and light. Holds aprons, frocks and protection garments in a compact orderly manner. Ends locker room evils. Catalogs showing the complete line of space saving and efficient single and double faced wardrobe wall and locker racks for every plant and office need will be sent upon request.

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Checker racks hold coat hangers and/or coat hooks.

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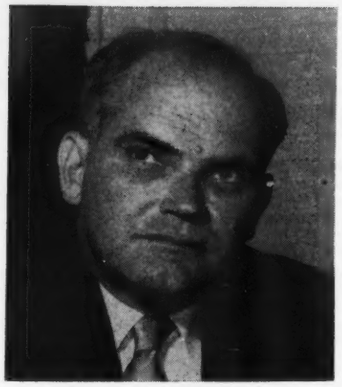

Future of quality brands held bright despite possible economic plateau

By ROY H. PARK
President
Hines-Park Foods, Inc.

My answer to the question, "What single factor, trend, or eventuality will have the greatest effect on the food industry in 1956," is: purchasing power. If the purchasing power that has created the booming food market of 1955 carries into and through 1956, then it is immediately obvious that another great year lies ahead for our industry. High level consumer income means that Americans in large numbers will be able to spend more for food, particularly in the quality brackets.

There have been repeated warnings that the economy must reach a plateau, hold the plateau, and then continue upward. This future upward trend will be caused, in part, by the tremendous population increase. If the present population growth continues at its present rate of 4,000 more mouths to feed every day, then on January 1, 1956 our population will have reached nearly 164.5 million.

In the event of that economic plateau coming in 1956, and there are signs pointing to it, then we must be prepared to cope with what we like to think of as a breathing period. During this breathing period we believe that the position of quality brands will continue to be strong in the food industry, just as it has been and is in the expanding economy.

Facing up to hard facts leads to one conclusion for survival: independents must join together in pooling their merchandising resources. In recognition of these trends and eventualities we are broadening our food base to include related items, thus making it possible for independent manufacturers to merchandise under a common, nationally-known brand name.

ACCELERATION
COLLISION IMPACT
IMPLOSION

in a Gaulin Homogenizer makes many products better – more economically

A Gaulin Homogenizer does three very important things to a product — it shears, expands and explodes, agglomerates down to their ultimate particle size.

The results of this particle acceleration go far beyond just making products uniformly finer, faster, more economically. In most cases, the physical characteristics of a product are modified.

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We'll be glad to show you just how a Gaulin can improve your product — and work with you toward solving any specific problems you may have. Write today for more information.

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Southern Representative: W. A. Hewitt, P. O. Box 961, Greenville, S. C.

Some Typical Products Improved by Gaulin Homogenizers

PHARMACEUTICAL
Emulsions and dispersions. Gaulins make them stable, uniformly finer. Permit accurate reproduceability.

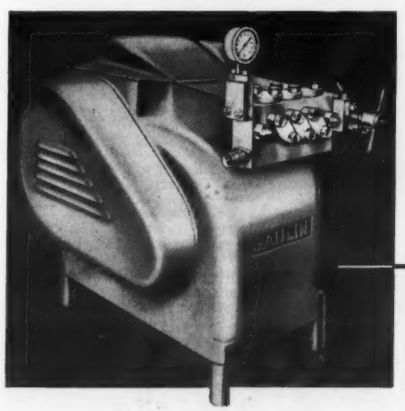
LIQUID STARCH
Improves transparency, clarity, and stops separation, at lower cost than other methods.

GREASE
Improves lubricating value and stability. Increases service life.

PIGMENT DISPERSIONS
Provides continuous high capacity producing dispersions of ultimate particle size.

COSMETIC EMULSION
Gives smoother texture, longer shelf-life. Locks in perfume against evaporation.

WAXES
Makes accurate reproduceability possible. Provides uniform, stable emulsions and convenient viscosity control. Increases gloss.



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Ideal for experimental purposes, operation or process requiring up to 25 gallons per hour capacity. Handles quantities as small as one pint. Available on low rental basis.

GAULIN TWO-STAGE COLLOID MILL
Stator is jacketed for cooling or heating. Gap setting adjustable for .001" to .045". Only 45 seconds clean-up required in changing colors. 12" head room. 12" x 17" floor area.

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WORLD'S LARGEST MANUFACTURER OF HOMOGENIZERS,
TRIPLEX STAINLESS-STEEL HIGH PRESSURE PUMPS,
AND COLLOID MILLS

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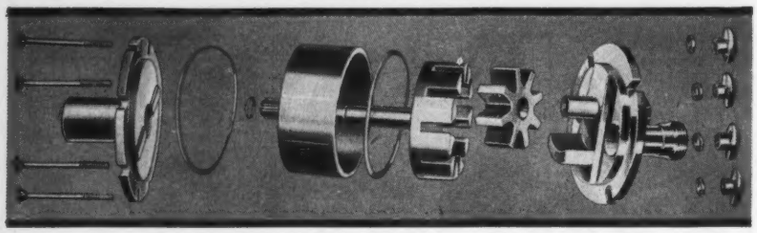
THE TRULY SANITARY PUMP

VIKING "SANITOR"

(Hydraulically Balanced)

20-35-50-90 G.P.M. sizes



Easy to clean — no large, awkward parts or small intricate pieces. No corners or recesses.

Quick and handy take-down construction. No tools required.

Positive, slow speed operation. Smooth, even flow. No churning or undue agitation.

Simple, O-Ring seal. First to use in the sanitary, positive displacement pump industry.

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Handy port arrangement. Simplify piping.

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THE ORIGINAL *"GEAR-WITHIN-A-GEAR"* ROTARY PUMP

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UNITED STATES STEEL EXPORT COMPANY, NEW YORK

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City ..... State .....

USS

UNITED STATES STEEL

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discussed in this issue

PROCESSES, EQUIPMENT, and MATERIALS

Use this "quick-locator" when you want information on a specific type of process, equipment, or material mentioned in the processing stories or the advertisements in this magazine. Everything discussed in this issue is given here, if you want more data you can write manufacturer direct . . . or turn to last page and use the "Information Request Slip." This is a special service provided by the publisher . . . no obligation or charge, of course. The publisher contacts the proper manufacturers for you—information comes to you direct.

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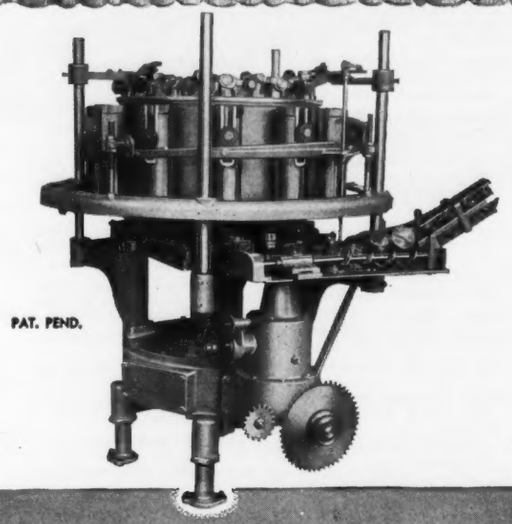
curtain going up on latest in

FOOD PROCESSING EQUIPMENT

see these profit-making production models

BOOTH NO. 8 JUICE AVE.
Canning Machinery & Supplies Assoc. Exhibit
ATLANTIC CITY • JAN. 18-21



PAT. PEND.

LIBRASCOPE FILLERS

FEATURE HIGH OUTPUT . . .
LOW MAINTENANCE COSTS

PISTON-TYPE (*shown at left: a 12-station model set up to handle dog food*) — Exhibited for the first time at the show will be a 25-station production model set up for baby food at speeds up to 800 containers per minute. Unit features exclusive new Librascope self-cleaning action that prevents build-up of product on valve guides and ports — eliminates frequent cleaning operations. Plunger-type valve design maintains positive closure against leakage, assures correct filling level, and provides longer valve life. All product contacts are 316 stainless steel or non-copper alloy for the utmost in surgical cleanliness. Manufactured by Librascope, Inc. Exclusive distributor: W. F. & John Barnes Company.

GRAVITY-TYPE — A Librascope 12-station production model for handling 46-ounce cans will also be exhibited.

Designed for Greater Efficiency

NEW GAS GENERATOR
NEW HEAT EXCHANGER

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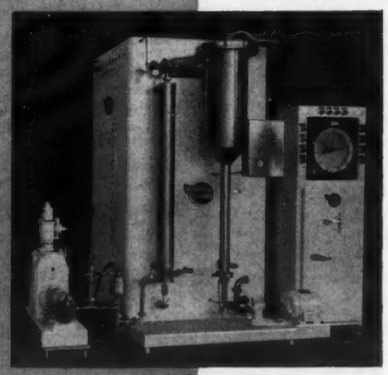

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◂**S-I-A GAS GENERATOR** — Compact unit provides accurate control of protective atmospheres in processing and packaging food and other products. Maintains constant, oxygen-free atmosphere to prevent deterioration and spoilage of product. Range of standard models available to meet a variety of needs for bulk or package storing, dehydration, drying, shipping, and metal, glass or plastic packaging. Manufactured by Barmotive Products, Inc. Exclusive Eastern Distributor: W. F. & John Barnes Company.

◂**BARNES ROTO-JET HEAT EXCHANGER** — New heat exchange system utilizing steam injection for sterilizing liquid and semi-liquid products. Purified steam is transferred directly to the product without heat loss, insuring maximum efficiency and economy. Unique control system maintains processing temperatures within ± ½-degree F., and exacting instrumentation affords a balanced product moisture content. Manufactured and sold by W. F. & John Barnes Company.

When **YOU VISIT THE BARNES' EXHIBIT** — ask for complete information on new Barnes Universal Case Packer.

Builders of Better Machines and Equipment Since 1872

W. F. & JOHN BARNES

FOOD & CONTAINER SECTION

408 S. WATER ST. • ROCKFORD, ILLINOIS

DOLE ASEPTIC CANNING EQUIPMENT • RETORT BASKET LOADERS AND UNLOADERS

When inquiring check FP 4420 opposite last page

Protect the Premium you Pay For Garden-Fresh Foods!

Use General Mills MSG

If you face strong competition for food sales—if your food profits depend on quality and taste appeal—then chances are you need flavor-intensifying General Mills Monosodium Glutamate.

Shipping, storage or cooking fades the true flavors of garden fresh foods. MSG restores to processed foods the maximum flavor richness that attracts and holds customers.

General Mills MSG is guaranteed 99+% pure glutamate crystals. It intensifies all 4 taste components, and may be added to food at any step in processing. Normally, 2 to 4 ounces of MSG to each 100 pounds of finished product is ample, with no formula changes necessary.

So don't take a chance on lost sales due to lost flavor. To help your foods reach the table noticeably fresh and tasty, try General Mills MSG now.

For Free Sample and Complete Information, Mail Coupon Below

General Mills

Special Commodities Division, Minneapolis 1, Minnesota

Gentlemen: Please send me a free test sample and complete information on General Mills Monosodium Glutamate.

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FIRM_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

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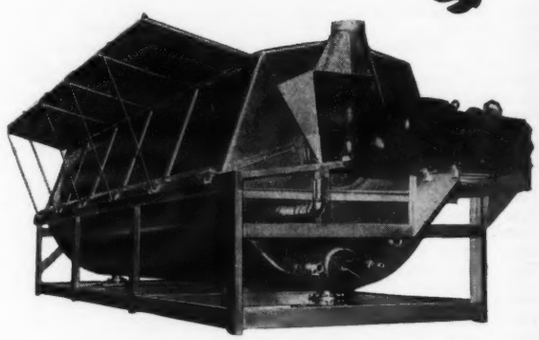
*SAY "SEE-AR-CO"

BLANCHER

BUILT TO BEAT CONTAMINATION

SANITARY
Hinged doors on both sides, wide clearance between shell and cylinder make cleaning easy.
NO CONTAMINATION
Vented only at feed and discharge openings to prevent the drafts, cool spots where bacteria grow.



See this new and other new or improved machines at Booth No. 3 in Atlantic City.

- ★ All corners and edges are rounded to eliminate bacteria breeding places.
- ★ Disc and rod construction of inner drum.
- ★ Flushable heating pipes.
- ★ Cylinder accessible from feed and discharge openings.
- ★ All fabricated construction—no castings.

The Feature Finders are right! CRCO's new Blancher doesn't give bacteria the time, temperature or place to grow. Write for complete data.

THE BEST OF Everything

CHISHOLM-RYDER CO. INC.
Niagara Falls, New York
FOR THE FOOD PROCESSOR

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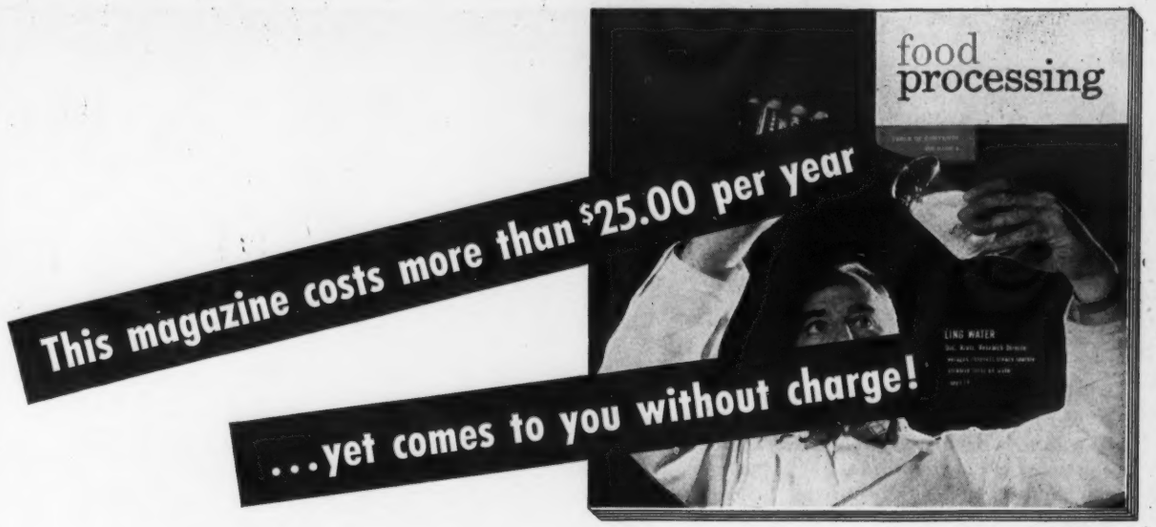

Why? Maybe, like many others, you've wondered why FOOD PROCESSING comes to you *without charge*—while, perhaps, you pay a subscription price for other business magazines.

Maybe you've thought publishers *make money* when they sell you a $3.00 or a $5.00 subscription.

No—publishers lose money . . . yes, most business magazines lose money when they sell a subscription — not only because the magazine costs more to produce than the subscription price brings in — but also because the cost of making such sales exceeds the income for $3.00 or $5.00 subscriptions.

Advertisers pay the bills — You see, it's the money that comes from advertising that keeps the business magazine publisher in business. So, logically, such advertisers *demand* best possible coverage of folks like you—the important key men who exercise buying power.

So—FOOD PROCESSING "hand-picks" best readers . . . and sends the magazine to these key folks, without charge.

For you simply can't get maximum coverage of these important folks by trying to sell subscriptions. These men, limited in numbers, are scattered all over the U.S.A.: travel and/or direct mail cost money; a large share "forget to renew" each year; and, no matter how much time, money and pressure you put on them, there are always some important men who will never buy.

FOOD PROCESSING gets best circulation . . . So, as you can see, to get the best, most effective circulation coverage, the best way is to "hand-pick" the right readers, then send the magazine to them. This gives values to advertisers which can't be gotten in any other way.

That's why . . . FOOD PROCESSING "hand-picks" only qualified readers . . . Men Who Manage food processing plants . . . presidents, partners, plant managers, foremen, food technologists, engineers, chemists, directors of research, etc. Then the editors make the magazine so interesting, so valuable, these folks want to read it.*

That's why FOOD PROCESSING spends many thousands of dollars on each issue—to give you this valuable service costing more than $25.00 per year, per reader. That's why FOOD PROCESSING comes to you without charge—*you are an important reader in the food field.*

Food Processing* *Every issue proves this qualified readership . . . by unequalled response from these key readers. May we show you the evidence?*

published by Putman Publishing Company

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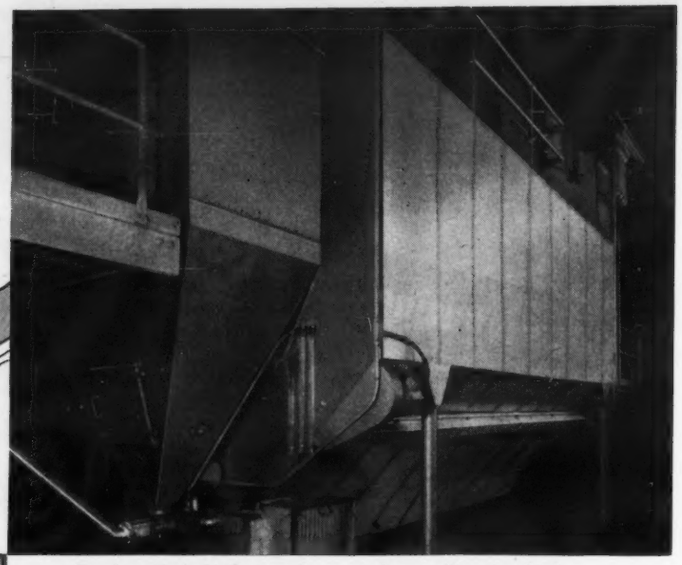
also publishers of:
CHEMICAL PROCESSING
FOOD BUSINESS
"Executive Magazines for Industry"

HENSZEY

Spray Dryer

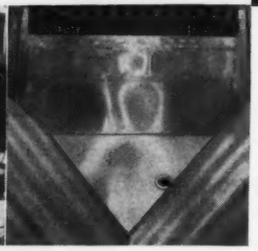
HORIZONTAL AIR SUSPENSION*

*Keeps powder thoroughly mixed with warm, moving air insuring fast and complete drying. From liquid to cooled packaged powder in 15 seconds. No mechanical conveyors required—Just air.



Polished stainless steel cyclone collectors shown in cleaning position.

Inside view showing slot in bottom of Vee for inlet of suspension air.



- Powder entirely *Air Conveyed*
- Stainless steel powder collectors — 99.5% efficiency
- Powder touches nothing but stainless steel
- Single or multiple interchangeable nozzles — for coarse or standard powder
- Steam coils or gas fired
- Up to 2,000 lbs. capacity per hour
- Welded air-tight stainless steel drying chamber
- Minimum installation time . . . erected and tested in factory

HENSZEY COMPANY • Dept. F, WATERTOWN, WISCONSIN

Manufacturers of: Multiple Effect and Single Effect Evaporators and Tube Preheaters

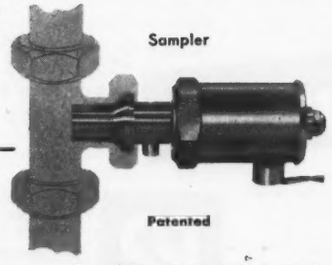
When inquiring check FP 4423 opposite last page

hold on there . . .

● Still using old-fashioned, inaccurate methods to check the uniformity and quality of your liquid products? Cost-conscious plant management can now obtain *accurate* liquid composite samples with the new L/W Automatic Composite Sampler! Product quality can be determined, product diversion throughout your plant's various departments can be controlled, and the Automatic Composite Sampler is indispensable for product checking during the loading or unloading of tank cars and trucks.

this is **NEW!**

THE COMPLETELY SANITARY
L/W AUTOMATIC COMPOSITE SAMPLER
FOR LIQUID FLOW LINE SAMPLING



- ACCURATE—Gives foolproof samples with no guesswork, no attention or adjustments.
- AUTOMATICALLY ACTIVATED—Wall-mounted timer assembly (not shown) activates sampler 10 times per minute. Timer is moisture-proof, no oiling necessary.
- CONTINUOUS INTERMITTENT OPERATION—Provides dependable, wasteless sampling of liquids going through flow line. No clogging, no sticking.
- SIMPLE TO INSTALL—Sampling valve assembly fits easily, quickly into sanitary tee in either vertical or horizontal flow leading to or from liquid pump.

For additional information, write for price list and FREE descriptive folder.

L/W **DAIRY SUPPLY DIVISION** 1266 Shelby Street • Indianapolis 3, Indiana

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January 1956

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Special subscription request-qualification form for use of

Management and technical men who wish to receive FOOD PROCESSING without charge

. . . fill in form below

If you are responsible for processing operations, in a management or technical capacity, as corporate officer, manager, plant superintendent, food technologist, chemical engineer, chemist, engineer, or equivalent responsibility . . . in a plant of substantial operations* where food processing is an important factor . . . FOOD PROCESSING will be sent to you without charge or obligation . . . if you request it. Use form below.

Present Reader . . . If this issue of FOOD PROCESSING was addressed to you or if you have previously mailed one of these request slips, it is not necessary to fill in this form.

New Reader . . . If you qualify as outlined above, FOOD PROCESSING will be sent to you without cost or obligation. In requesting, be sure to answer all questions. If your firm is not rated or listed in standard references, indicate size of the company by capacity, annual sales, or number of employes. Unless all information is given, magazine will not be sent.

Name _____ Title _____

Company _____

Main Products _____

Rating of Company _____

Street Address of Company _____

City _____ Zone No. _____ State _____

Others in Your Plant . . . If others in your plant, having responsibilities for processing operations, as outlined above, would also like to receive FOOD PROCESSING, use the form on back of this sheet.

Change of Address . . . Use this form to notify us of a change in address. Please answer all questions in regard to your new affiliation, and in addition give us your former address including company, city, and state.

Former Company Affiliation _____

Former Address _____

Your Name _____ Present Title _____

Present Company _____

Main Products _____

Rating of Company _____

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10	Battery-operated pH Meter
11	Moisture Register (state application)
12	Color Measurement for Quality Control
13	Laboratory Equipment
14	X-ray Can Level Checkers
15	Flavors
16	Histology of Pork Casings
17	Roller Conveyors
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91	Wrapping Machine
92	Export Advantages
93	Gluconic Acid
94	M&S Fillers
95	Centrifugal Pumps
96	Bag Closing Machine
97	Monoglycerides
98	Hand Trucks
99	"Sanitary" Casters
00	Contractors and Production Counters
01	Lift-Walkie Truck
02	Flexible Conveyor Belting
03	Fruit Branch Shredder
04	Soil Moisture Meter
05a	Mix Cooker
05b	Stainless Tilting Kettle
06	Filipin
07	Systemic Pesticide
08	Steam Generators and Boilers
09	Steam-jet Cleaner
10	Aqua Ammonia
11	Farm Equipment Speedometer
12	Roller and Belt Conveyors
13	Fruit Flavors
14	Colloids
15a	Aromatics
15b	Natural and Synthetic Flavors
16	Coat and Hat Racks
17a	Pilot Plant Homogenizer
17b	Colloid Mill
18	Hydraulically Balanced Pump
19	Metal Processing Belts
20a	Filler
20b	Gas Generator
20c	Heat Exchanger
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January 1956

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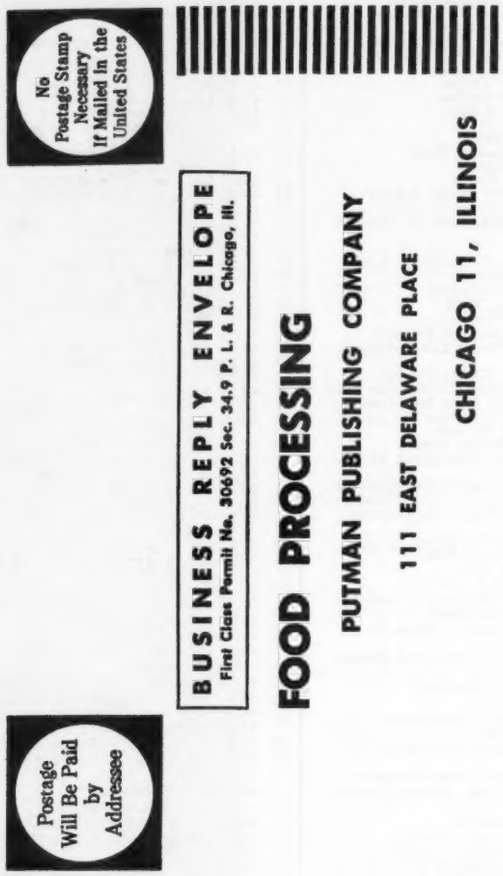
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that's interesting

(Continued from page 3)

Pigs get a kick out of this

In an attempt to turn Denmark's surplus sugar beets into food for pigs, a feed composed of sugar beets and barley in the form of a mash has been developed. As it is fermented, each pig is said to receive the equivalent of eight shots of Danish aquavit. The pigs seem to like their new food and its inherent "kick".

Milk in rainbow hues

New milk flavors in a rainbow variety of colors have been developed by University of Maryland dairy scientists. Cherry, strawberry, grape, coffee, and raspberry have been perfected so far, with lemon, tangerine, peach, lime, and pineapple on the way. (As reported by the Farm Journal.)

Precision parts measured by sound

Blind people can do precision testing of close-tolerance production parts with an ultra-sensitive electronic sound gage. Developed by Burroughs Corp., Detroit, it is about the size of a telephone and connects to an amplifier. Parts are inserted into a measuring anvil. Reading is transformed into a sound tone as well as a visual light signal.

Nothing's known like Norda Nodes... spray-dried for you by Norda

The technique of spray-drying food flavors has reached a new peak in the new Norda plant. Norda makes Norda Nodes here.

Norda Nodes are tiny buds of completely uniform flavor locked in, *in-blown*, by spray-drying. Their colloid coat of protection instantly dissolves on contact with liquids, tastes true. Norda Nodes assure fresh, unfaded richness, unchanged, through your products' shelf life. Norda *in-grown quality* lasts.

Norda Nodes are worth your testing. They may have a great promise of profits. Ask for convincing free samples by a note on your letterhead.

"Flavor it with a Favorite"- Norda Nodes

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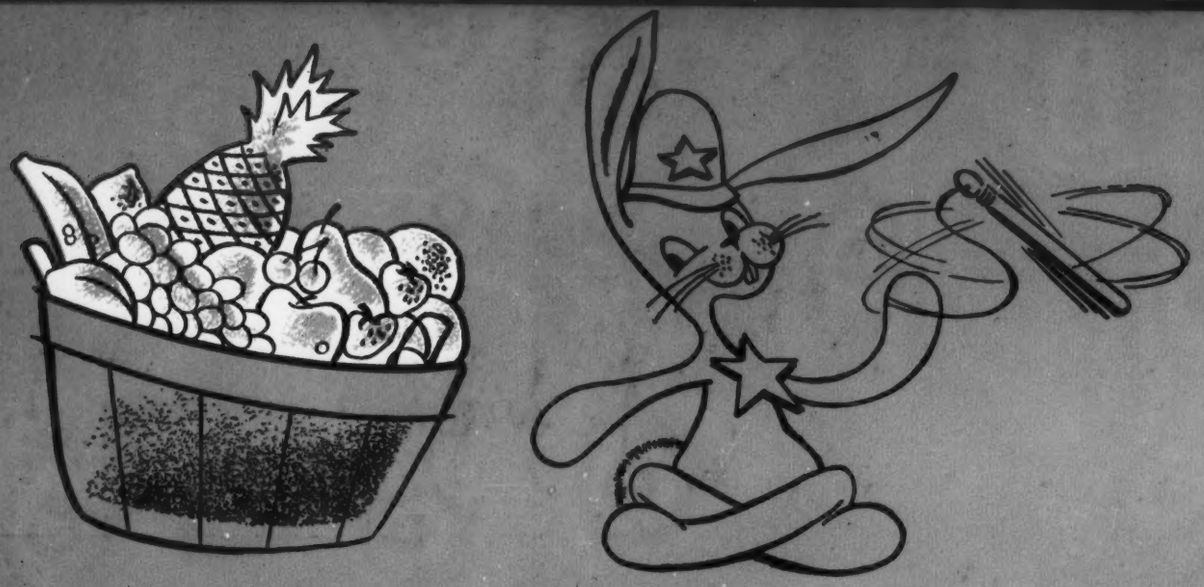

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The famous SEALVA process—of hermetically sealing minute droplets of flavoring oils within an edible gum film—provides a flavor in which even the most fugitive components remain unchanged in their fresh original state over extended periods of shelf-life.

SEALVA flavors—in commercial use for almost three years—give manufacturers a dry powdered flavoring material protected against oxidation, and volatilization.

SEALVA flavors have been enthusiastically adopted by makers of

- CAKE MIXES
- GELATIN DESSERTS
- CEREALS
- SUMMER DRINK POWDERS
- PUDDING MIXES
- DAIRY MIXES
- ICE CREAM MIXES
- CANDIES (pressed wafers)
- PHARMACEUTICALS

For samples and technical recommendations for adapting SEALVA flavors to your product, write

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